

North Carolina Coastal Zone Management Program

CAROLINE BEACH



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BLUEPRINT FOR THE FUTURE  
TOWN OF CAROLINA BEACH  
LAND USE PLAN  
1985-1995

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TOWN OF CAROLINA BEACH  
1986  
CAMA LAND USE PLAN UPDATE

ADOPTED MAY 22, 1986

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## INTRODUCTION

The 1974 Coastal Area Management Act required the establishment of a cooperative program of coastal land management between local governments and the State of North Carolina. This program has been implemented by the State through the local Land Use Plan, a document to be prepared by the relevant local government (or, for it, by the State) which reflects local policies, concerns, issues, and philosophies regarding the use of all coastal land within local jurisdiction.

The Town of Carolina Beach has adopted two previous Land Use Plans. The first plan was adopted in 1976 and the second was adopted in 1980. These plans were general and conceptual in nature, providing broad policy statements that were limited in providing guidance to site-specific land use decisions. However, for a slowly growing coastal community like Carolina Beach in 1976 or 1980, this general approach was quite adequate.

Since the 1980 Land Use Plan, the Town of Carolina Beach has undergone enormous changes. Its population has nearly doubled in this five year period. Commercial land use acreage has increased three hundred percent since 1980. There have been more residential dwelling units permitted for construction since 1980 than existed in 1980.

This 1985 Land Use Plan attempts to inventory the type and extent of these mammoth changes, to chart development and economic trends resulting from these changes, and to assist in preparing the Town to control and manipulate further changes through growth management techniques.

In order to accomplish this purpose, this 1985 Land Use Plan is divided into seven Elements and eleven Technical Appendices. The Elements are concerned with the inventory of existing conditions and trends, and the establishment of policies and implementation procedures for managing development issues of importance to the Town. The Technical Appendices provide supporting information for the Elements.

The Elements are designed to be educational tools, as well as aids to decision-making. In this manner, they serve to inform the general public and Town officials alike as to the rationale behind specific Town policy goals and directives.

A Reference Index to cross-reference information contained in the Elements and Technical Appendices with State Land Use Planning Guidelines is provided on pages iv and v.

The Town of Carolina Beach, as a rapidly growing coastal community, recognizes both the danger and the potential inherent to changing conditions. The 1985 Land Use Plan serves as the means by which the Town intends to avoid the dangers of growth while simultaneously unlocking the potential of that growth. The plan is thus the Town's "Blueprint for the Future".

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## REFERENCE INDEX

### NORTH CAROLINA ADMINISTRATIVE CODE, SUBCHAPTER 7B

#### LAND USE PLANNING GUIDELINES

In an effort to interrelate the format of this Land Use Plan Update with State Land Use Planning Guidelines, this Reference Index has been produced which will facilitate cross-referencing of State guidelines with Land Use Plan Update Elements and Technical Appendices. The State Land Use Planning Guideline issues are listed below with the relevant Land Use Plan Update page numbers provided in parentheses for cross-reference purposes.

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## NATURAL RESOURCES

Carolina Beach derives much of its economic revenue and its cultural charm from the natural amenities of its coastal location. In order for the Town to continue to be a desirable place in which to live, visit and work, these natural amenities must be protected, preserved, and whenever possible, improved upon. This Element of the Town's Land Use Plan establishes decision-making policies and implementation procedures designed to achieve a balance between the commercial and residential development of the Town and the continued maintenance of the natural systems and vistas that encourage such development.

The Town contains a number of significant environmentally-sensitive areas. Each of these areas must be viewed as a functional sub-unit of the coastal environment. As such, each area requires a different level of protection, separately tailored to the economic and aesthetic well-being of the Town. A brief description of each of these areas is provided below. Map NR-1 (p.10) indicates the physical location of these areas within the Town.

### Atlantic Beach and Ocean

The Atlantic beach and ocean comprise Carolina Beach's most important natural resource. They are the focal point for the Town's tourist industry, and also serve as the primary source of recreation for the residents of the Town. The primary environmental concerns for the Atlantic beach and ocean involve shorefront development and erosion and the potential for pollution from off-shore oil exploration. The former concern is discussed in detail below.

In environmental terms, the Carolina Beach oceanfront is properly described as "developed." This means that the natural system of dunes and vegetation common to undeveloped beachfronts has been disturbed by human activity. Because the natural means of stabilizing the oceanfront has been altered, man has had to assume that responsibility in order to protect lives, property, and the beach itself.

There are two basic ways in which developed oceanfronts can be protected from erosion caused by waves, wind and tides. The structural method involves the construction of seawalls, bulkheads or other permanent structures. This method tends to cause erosion on adjacent properties not so protected and usually results in permanent loss of the beach within a relatively short period. In Carolina Beach, the only structural means of stabilization is the rock revetment or seawall installed the Northern Extension north of Periwinkle Avenue.

The non-structural method of shoreline stabilization involves renourishment and revegetation of the oceanfront in a manner that approximates the natural system of stabilization. This method, although very expensive, is increasingly preferred over structural means since it results in less damage to adjacent unprotected properties and maintains a beachfront which is very

similar to that which occurs in a natural system. The Town of Carolina Beach has long recognized the benefits of the nonstructural method of stabilization and currently is involved, along with the Federal, State and County governments, in a program of renourishment and revegetation of the Town's beachfront. This project is a continuation of a long-standing local and State commitment to proper management of the developed beachfront.

As alluded to in the preceding paragraph, the N.C. Legislature, in 1963, recognizing the need for permanent stabilization of developed beaches in New Hanover County, granted public ownership of the ocean berm to the local municipalities. Thus, the Town of Carolina Beach owns all lands eastward from the berm line established in the 1963 Session Laws to the mean high water line; eastward of the mean high water line are State owned lands.

Because of this, the Town has a unique responsibility with regard to its oceanfront. If substantial erosion of the public beach occurs, not only is private property threatened, but the Town's most valuable natural resource, its public beachfront, is lost. Consequently, the Town is firmly committed to maintaining its man-made beach, dune system and vegetation as close environmental substitutes for the natural systems which protect undeveloped coastal areas. This precludes encroachment of development upon these systems. The Town, therefore, supports non-structural means of stabilizing the ocean shoreline except for temporary structures erected to protect property from imminent danger of destruction due to erosion. (Another possible exception may involve eventual "hardening" of the Carolina Beach Inlet to provide improved beach erosion control and channel stabilization.)

#### Buffer Zone/Carolina Beach State Park/Snow's Cut (A.I.W.W.)

These three areas are considered together because the Town has restrictions on its ability to affect environmental or other land use decisions in these areas due to jurisdictional limitations. The Buffer Zone is owned and controlled by the U.S. Department of the Army to serve as a natural blast shield for private properties in the event of an accident involving munitions at the Sunny Point Military Ocean Terminal. The Carolina Beach State Park is owned and operated by the State of North Carolina as a means of providing public access to a natural coastal environment and to the waters of the Cape Fear River. Snow's Cut, a component of the Atlantic Intracoastal Waterway (A.I.W.W.), has its banks controlled by a spoil deposition easement owned by the U.S. Army Corps of Engineers; this easement takes precedence over any other possible use of this property.

All three of these areas serve as important wildlife habitats and as permanent open space areas within the Town. Because of this aesthetic and recreational significance, the Town supports maintenance of these areas in their natural condition or with limited development for recreational purposes.

### Carolina Beach Lake

Other than the Atlantic Ocean and, possibly the Town's public marina, the most widely recognized body of water in Carolina Beach is Carolina Beach Lake. The Lake has historically been the Town's primary drainage basin; it also provides an important scenic vista within the Town and has recently seen its recreational potential being tapped through activities sponsored by the Town's Parks and Recreation Department.

Carolina Beach Lake is subject to periodic flooding, particularly after hurricanes and tropical storms deluge the Town with large amounts of rainfall. This flooding is exacerbated by a high water table, low Lake elevation and development in the surrounding area, as well as the fact that the Lake's only outfall, Myrtle Grove Sound, is itself generally at unusually high levels during these major storm events, thus limiting its capacity to drain the Lake.

The large wetland area to the south of the Lake helps alleviate the effects of flooding by serving as an overflow retention pond during periods of high water. It also absorbs many of the pollutants carried through drainage ditches and streets that might otherwise reach the Lake.

This wetland area has received some development pressure, but, because it has been designated a "404" wetland and thereby subject to the development restrictions of the Army Corps of Engineers, it has remained largely undeveloped. The spongy soils of this wetland area, classified as Tidal Marsh by the Soil Conservation Service (SCS), provide a very useful environmental function by absorbing water and releasing it slowly. The development potential of these soils, however, is rated "severe" by the SCS, indicating that site development will necessitate some fill material being utilized; filling will destroy the environmental function of those soils.

Until a solution to the Lake flooding problem has been selected and implemented, the Town supports leaving this wetland area undeveloped, since it reduces the amount of floodwaters which threaten already developed properties. The Town also supports those development proposals in the vicinity of the lake which reduce the amount of impervious surface or which otherwise reduce the drainage load placed on the Lake which provide improved visual access to the Lake. Additionally, the Town supports any measures which limit the flow of pollutants into the Lake.

### Myrtle Grove Sound

Myrtle Grove Sound has the most varied waterfront of any of the Town's major water bodies. On its western edge are two commercial marinas, several large condominium-marina developments, a water-oriented single family subdivision and some undeveloped property. The southern end of the sound contains the municipal marina which berths a number of sportfishing vessels in a picturesque setting. The eastern edge, much lower-lying and prone to flooding than the western edge, is bordered by numerous small condominium projects and single family homes.

Because of the extent of the development along its banks, Myrtle Grove Sound is prone to many potential pollution problems, ranging from excessive dredging for marinas to increased stormwater runoff from streets and structures. Fortunately, the regular tidal flushings the Sound receives, along with the pollutant-trapping wetland vegetation (primarily) along the Sound's western edge and on its spoil islands, serve to help cleanse the water.

In order to promote continued good water quality in Myrtle Grove Sound, the Town supports reduction in the amount of runoff from proposed developments, preservation of existing wetlands and associated vegetation, reduction of dredging activities to the minimum extent necessary to allow safe boat travel, and maintenance of the tidal flushing action that contributes positively to the water quality of the Sound. Commercial marina development consistent with local zoning regulations (see Future Land Use Element, p. 82) shall be supported, so long as dredging activities are kept to the minimum extent necessary to allow safe boat travel.

#### Northern Extension Wetlands

The north end of the Northern Extension is the most environmentally productive and sensitive area within the Town of Carolina Beach. This coastal beach and wetland area constitutes a wide spectrum of ecological activity. The eastern portion is a low ocean dune system which is occasionally inundated by high ocean waters. The western portion is a classic estuarine wetland, highly important in the lifecycle of most marine creatures; these estuarine wetlands are where many of the sea's fishes and shellfishes live for some portion of their lives. The beach and dune area serves as nesting habitat for endangered sea turtle species.

Because of the high ocean and estuarine erosion rates, low elevation, high water table, and unsuitable soils, this area is regarded as undevelopable. However, unrestricted access to this area by recreational vehicles endangers many of its fragile ecological communities. By keeping vehicular traffic off the dune areas and out of the wetland areas, it may be possible to improve the functioning of these ecosystems, with the consequence of helping lower oceanfront erosion rates currently threatening to open a new inlet.

Therefore, the Town of Carolina Beach supports retaining this coastal wetland area in its natural state and restricting vehicular traffic to the ocean side of the dune line as a means of protecting the ecological function of this important resource area.

#### Ground Water Supply Sources

The Town of Carolina Beach depends upon the Castle Hayne Aquifer for its source of potable water. This deep aquifer receives little, if any, recharge from the Carolina Beach soil system and underlying geologic strata. Thus, there are few development practices or regulations that can be implemented by the Town to assist in the long-term delivery of high quality fresh water.

The Town must, therefore, commit itself to working with other

appropriate governmental bodies to provide for a continued pure supply of potable water. Support for policies and actions by other governmental units that promote good drinking water quality in the Castle Hayne aquifer is essential for the long-term well-being of the Town's citizens.

#### POLICIES AND IMPLEMENTATION PROCEDURES

In order that the areas described above can be given protection commensurate with their particular ecological functions and environmental restrictions, the following policies and implementation procedures are established by and for the Town of Carolina Beach. Policies are official guidelines set down for present and future decision-making; they are broad in scope to allow the degree of flexibility necessary to adequately accommodate changing conditions in a rapidly-growing resort area like Carolina Beach. Implementation procedures are directives to the Town Manager and staff as to how the policies are to be administratively enacted; they are necessarily specific to the issues in question.

##### Policies

- (1) PROTECT, PRESERVE, AUGMENT, AND DEVELOP THE  
NATURAL RESOURCES OF THE TOWN OF CAROLINA BEACH.

This policy establishes the importance of the Town's natural resources while recognizing that some modification of these resources is a necessary and desirable product of the Town's development.

- (2) AVOID SHORT-SIGHTED OR PREMATURE COMMITMENTS  
OF THE TOWN'S IRRETRIEVABLE NATURAL RESOURCES.

The Town shall avoid committing its irretrievable natural resources (such as wetlands, surface water bodies, shorefront, etc.) until the full costs and benefits of such commitment have been adequately assessed.

- (3) SUPPORT THE EFFORTS OF OTHER LOCAL, STATE, AND  
FEDERAL AGENCIES TO PROTECT, PRESERVE, DEVELOP,  
AND AUGMENT BOTH THE TOWN'S NATURAL RESOURCES AND  
THOSE IN THE VICINITY OF THE TOWN.

The Town shall support those actions taken by other governmental bodies which serve to preserve, protect, develop, and augment the natural resources of the Town and its vicinity, when said actions are consistent with the official policies of the Town.

- (4) WHEREVER POSSIBLE AND APPROPRIATE, NATURAL  
ECOLOGICAL SYSTEMS SHOULD BE MAINTAINED AND/OR  
IMITATED BY DEVELOPED SYSTEMS AS FUNCTIONAL  
SUB-UNITS OF THE COASTAL ENVIRONMENT.

The Town recognizes that natural systems, when functioning properly, provide numerous benefits to society at little or no cost. These systems should be preserved or imitated in order to maintain the continued realization of these benefits by the Town.



- (5) THE NATURAL VIEWS AND VISTAS PROVIDED BY THE OPEN SPACES WITHIN THE TOWN SHALL BE PRESERVED AND PROTECTED TO THE MAXIMUM EXTENT POSSIBLE.

The Town shall act to encourage the maximum preservation and enhancement of the natural views provided by the Town's open spaces in a manner which both accepts and recognizes private property rights and offers incentives for the exercise of those rights in a socially-constructive manner.

#### Implementation Procedures

- (1) Reclassify the wetland area south of Carolina Beach Lake as "Conservation" on the Town's Land Use Map.

Reclassification of this area will help preserve its important environmental functions with regard to flood protection and pollution filtration. Should a solution to the severe flooding problem in the Carolina Beach Lake vicinity be implemented so that the wetland area loses its value as a flood control mechanism, future re-classification of this area to allow development may be possible. Rezoning to protect this area is proposed in the Future Land Use Element (p. 83).

- (2) Adopt the following stormwater retention requirement as part of the Town's zoning and subdivision ordinances: All multifamily (3 or more residential units per structure) and commercial developments shall provide for onsite retention of the first one (1) inch of rainfall, with the minimum design criterion for any retention areas being a ten-year, twenty-four hour storm event. This requirement shall not apply to properties zoned B-1, T-1, or A-1.

This implementation procedure will result in less stormwater reaching Carolina Beach Lake, Myrtle Grove Sound, and public streets and drainage facilities. As a consequence, the Town's drainage, flooding, and pollution problems will be decreased.

- (3) Prepare and adopt a landscape ordinance that addresses, at minimum, the following issues:
  - (a) Lot clearing;
  - (b) Parking lot landscaping; and
  - (c) Preservation of native vegetation.

Such an ordinance will assist in the preservation of natural vegetation and result in the improved scenic appearance of the Town of Carolina Beach.

- (4) Continue to utilize non-structural methods of shoreline stabilization for the Town's Atlantic oceanfront, except in cases where only structural methods, erected on an emergency and temporary basis, will prevent damage to public and private property.

This implementation procedure continues the Town's long-standing tradition of utilizing beach revegetation and renourishment as the accepted means of stabilizing its Atlantic beach. Encroachment of development or other human activity upon this system is strictly regulated by State and local requirements. The emergency erection of sandbags or other temporary structures during unusual high water conditions is provided for in a manner that is consistent with State policies regarding the Atlantic beachfront. The Town Manager and staff are directed to maintain contact with all appropriate governmental agencies to continue the current program of beach renourishment and revegetation to provide the necessary level of protection from encroachment by human activities for this system.

- (5) Prepare and adopt a resolution requesting that the New Hanover County Board of Commissioners restrict vehicular travel in the northern extension wetland area to areas to the east of the primary duneline.

This action will preserve the ecological function of this area, while retaining its tradition as a spot for recreational enjoyment.

- (6) Bulkheading and filling of the Town's shorefront forward of the areas of environmental concern is to be discouraged, except along the eastern edge of Myrtle Grove Sound and around Carolina Beach Lake where it may be necessary as a flood control measure. Re-establishment of wetlands is to be strongly encouraged.

This implementation procedure directs the Town Manager and staff to take actions designed to maintain the wetland fringe along most areas of the Town's freshwater and estuarine shorefronts. Provision is made for that shorefront area in which the flooding problem is of primary importance. Re-establishment of wetland areas through public or private action should be strongly encouraged through administrative action by the Town Manager and staff. Coordinative activities with State and Federal environmental permitting agencies to accomplish these directives is strongly recommended.

- (7) Dredging, filling, or otherwise altering tidal flushing or other water circulation patterns is to be minimized.

The Town Manager and staff are directed to maintain administrative policies which strike a balance between environmental concerns for the Town's water bodies and the public and private right of riparian access. Dredging activities should be kept to the minimum necessary to provide appropriate water access. Filling of water bodies should be discouraged. Coordination between the Town Manager and staff and the applicable State and Federal environmental permitting agencies is strongly recommended as part of this implementation procedure.

- (8) Encourage off-shore oil exploration so long as such exploration is performed in an environmentally-acceptable manner and with proper regard for the inherent risks to communities having water-based economies.

Eventual exploration of the Continental Shelf for oil reserves is anticipated and encouraged by the Town as part of the national goal of energy self-sufficiency. However, the Town, as a coastal community with a water-based economy, cannot support exploratory activities which do not provide acceptable levels of environmental protection. The Town Manager and staff are directed to review oil exploration plans for provisions to protect coastal waters from polluting activities. Administrative coordination with outside agencies is considered a necessary component of this implementation procedure.

- (9) Coordinate activities with other governmental units with regard to the continued maintenance of publicly-controlled areas as open space and for recreational uses.

Administrative contact should be maintained with the appropriate local, State, and Federal agencies in order to reinforce the Town's concerns that the Buffer Zones, Snow's Cut, Carolina Beach State Park, and other such areas remain as open space for aesthetic and recreational enjoyment.

- (10) Coordinate activities with other governmental bodies with regard to environmental policies and implementation procedures of interest to the Town.

The Town Manager and staff are directed to maintain a system of intergovernmental coordination that will insure that the Town is:

- (a) protected from activities by other governmental bodies that have the potential of harming the Town's natural resources, and
- (b) supportive of those activities by other governmental bodies which complement the policies and procedures established in this Element.

- (11) Energy facility siting efforts, excluding offshore oil exploration activities discussed in Implementation Procedure (8) above, shall be carefully scrutinized by the Town Manager and staff for adverse environmental effects on the Town.

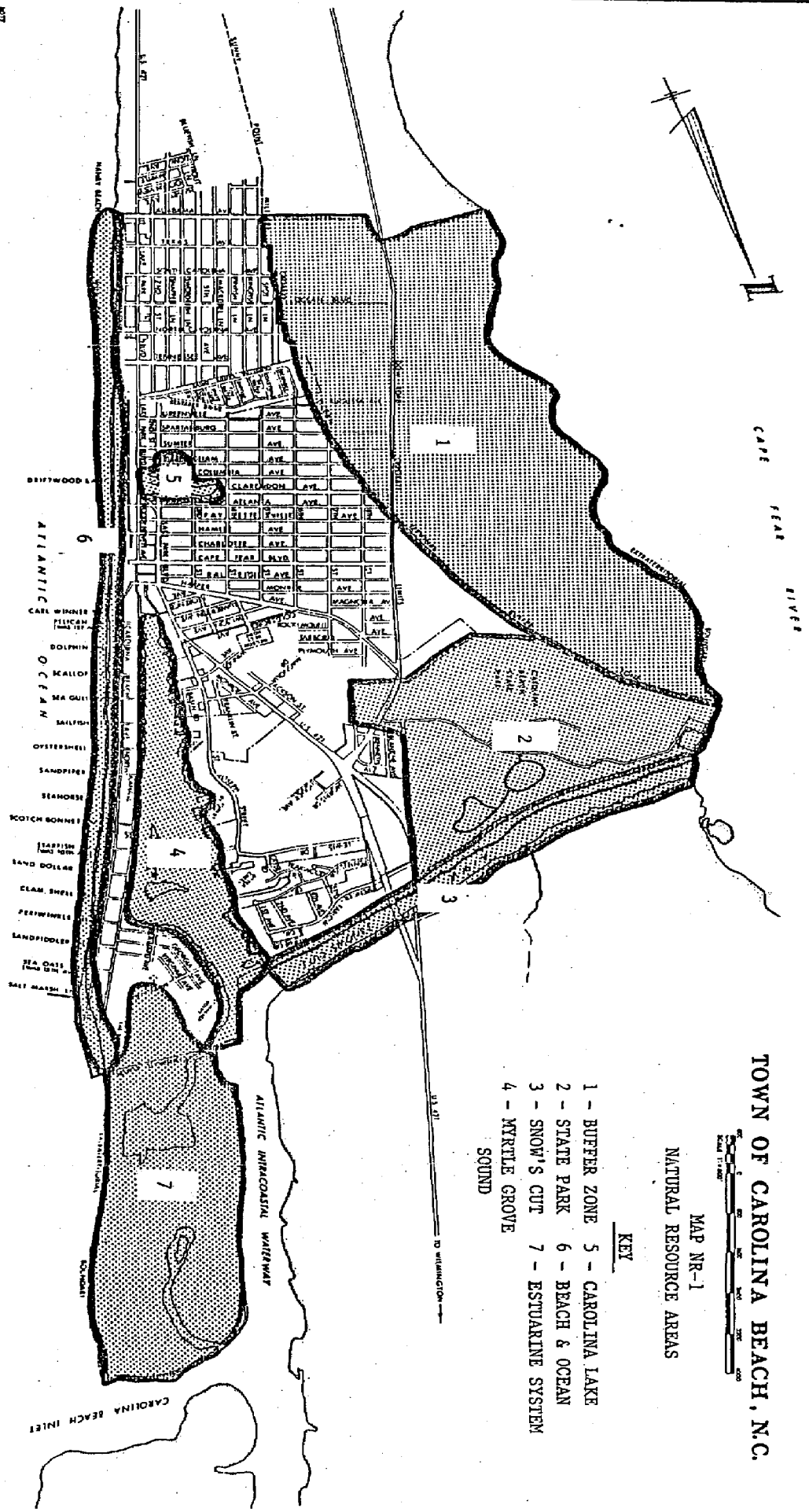
Energy facilities, such as the Brunswick Nuclear Plant, can create a variety of negative effects on the surrounding environment. The Town Manager and staff are directed to examine all energy facility siting efforts in the Carolina Beach vicinity and report to the Town Council as to perceived need for the facility and all perceived benefits and costs associated with the facility.

- (12) Commercial marina operations consistent with Town zoning regulations shall be supported when dredging activities are kept to the minimum extent necessary to insure safe boat travel.

Carolina Beach is situated close to three important water navigation points: The Atlantic Intracoastal Waterway; Carolina Beach Inlet; and The Cape Fear River. Commercial marinas should be encouraged to locate in Myrtle Grove Sound to take advantage of this geographic conflux, so long as dredging activities are minimized.

- (13) Prepare for consideration additional ordinances and resolutions, as needed, to protect, preserve, develop, and augment the natural resources of the Town.

The Town Manager and staff are directed to prepare for consideration additional ordinances, as needed, to encourage development of Carolina Beach in conformity with the environmental policies established herein.



TOWN OF CAROLINA BEACH, N.C.

Map 11-1000

Map 11-1000

MAP NR-1

NATURAL RESOURCE AREAS

- KEY
- |                  |                      |
|------------------|----------------------|
| 1 - BUFFER ZONE  | 5 - CAROLINA LAKE    |
| 2 - STATE PARK   | 6 - BEACH & OCEAN    |
| 3 - SNOW'S CUT   | 7 - ESTUARINE SYSTEM |
| 4 - MYRTLE GROVE |                      |
| SOUND            |                      |

## ECONOMICS

The traditional mainstays of the Carolina Beach economy have been tourism, real estate, and commercial and sport fishing. The recent growth of the Town's retail commercial sector has added a fourth component to the Carolina Beach economic base.

While this Element of the Town's Land Use Plan will therefore primarily be concerned with those economic issues involving tourism, real estate, fishing, and retail sales, other sectors of the Town's economy merit consideration. The Town must always be prepared to diversify its economic base as long as such diversification does not create negative impacts on existing businesses and industries. By establishing appropriate standards to encourage the proper types of commercial and industrial development and by guiding such development into appropriate locations, the Town of Carolina Beach can build upon the economic foundation of its primary industries.

### TOURISM, REAL ESTATE, FISHING, AND RETAIL SALES

Due to the nature of these four industries, tourism, real estate, fishing, and retail sales have become inseparably linked in the Carolina Beach economy. For example, tourism provides the local real estate industry with a steady supply of new customers, as visitors to the Town become enamored with its many charms and make decisions to buy property in Carolina Beach. The Town's fishing industry provides fresh seafood, recreational opportunities and picturesque settings that promote tourism. The real estate industry encourages investment and construction that make increased tourism possible. Increased population creates a demand for more retail shopping opportunities which also encourages tourism and real estate investment.

Despite the fact that these four industries are naturally complementary, there is also the potential for negative effects. Real estate decisions that cause degradation of the Town's tourist areas, such as those that have led to the deterioration of the Boardwalk, result in fewer tourists. The condition of the Town's public marina not only reflects negatively on the Carolina Beach fishing industry, but also serves to bring fewer tourists and real estate customers to Town.

It is therefore obvious that the Town should act to accentuate the positive and self-complementary aspects of its four major industries while simultaneously attempting to reduce the negative effects each industry can have on the others. This important goal is the focus of the policies and implementation procedures of this Element of the Town of Carolina Beach Land Use Plan. Preceding these policies and procedures are general descriptions of the Town's four major industries.

#### Tourism

New Hanover County attracts some \$130 million annually in tourist revenue. Carolina Beach, as the most tourist-oriented of the three beach communities within the County, accounts for a substantial portion of that total amount. On a given summer day,

it has been estimated that the population of Carolina Beach varies between 20,000 and 25,000 persons, including 5,000 day visitors. (See Appendix 1, p. 87) This is six to eight times the Town's year-round population.

These visitors to the Town are served by a beautiful strand of highly accessible public beach, 38 motels, 16 restaurants, a central business district, and two shopping centers. Many new condominium projects offer vacation packages for visitors who prefer kitchen facilities and separate bedrooms. The Boardwalk, with its shops and arcades, has been a traditional entertainment area for decades and serves as the focal point for the Town's tourist industry. A major convention center and hotel is scheduled for construction at the south end of the Boardwalk.

Despite this current prosperity, however, the tourist industry in Carolina Beach faces significant changes in the future. Throughout the Town, many of the shops, motels, and arcades have fallen into disrepair. The public beach is subject to erosion. The Boardwalk needs major rehabilitation for it to continue to effectively serve the tourist clientele that flows into Carolina Beach. Recreational amenities are scarce or in need of improvement. The recent growth of the tourist industry has created land use conflicts with the residential areas of the Town and has isolated the Central Business District from the tourist trade.

If these problems are allowed to persist, the Town's tourist industry may find itself in a period of decline. The Town, therefore, commits itself to a program of ensuring the future prosperity of its tourist industry through the following actions:

- (1) Preservation and rehabilitation of the Boardwalk;
- (2) Continued renourishment of the public beach;
- (3) Centralizing tourist-oriented land uses;
- (4) Redevelopment of blighted tourist areas;
- (5) Provision of increased and more varied forms of tourist-oriented recreation; and
- (6) Promoting pedestrian and vehicular traffic circulation patterns which link the central tourist areas with themselves and with the Central Business District.

#### Real Estate

Carolina Beach is served by over twenty real estate firms. For a small community to be able to support so many realty firms is a good indication of both the tremendous growth the Town has experienced and the promise of future growth in the real estate market. Since 1980, approximately 2,200 new, predominately residential units have been constructed in Carolina Beach. Growth projections indicate that four to five hundred new residential and hotel/motel units will continue to be added on an annual basis.

Recently, however, the Town has seen a slump in its growth boom. This is generally attributed to builders and investors "overbuilding the market" thus creating a situation of supply exceeding demand. This condition is regarded as temporary by many local real estate observers. More variety and amenities to be provided in future projects, along with the construction of the proposed convention center and hotel and the completion of the

I-40 link between Benson and Wilmington are all factors which are expected to re-ignite the real estate market in Carolina Beach.

The Town, however, cannot assume that these factors will, by themselves, create a healthy atmosphere for its real estate industry. The many dilapidated structures throughout the Town, the rundown condition of the Town's capital facilities (roads, drainage systems, public marina), and the Town's limited recreational amenities all need improving if the Carolina Beach real estate market is to continue to thrive. New zoning regulations that create less cluttered, more open land use arrangements must be improved upon, and natural resources and open spaces must be preserved if the amenities that bring new residents, visitors, and investors to Carolina Beach are to be maintained.

The Town of Carolina Beach is, therefore, committed to taking a positive role in ensuring the future prosperity of its real estate industry through the following actions:

- (1) Provide incentives and regulations to encourage redevelopment, rehabilitation, or removal of blighted land uses;
- (2) Develop new ordinances and regulations to augment and protect the Town's natural resources and scenic vistas;
- (3) Provide sufficient public services in a timely manner to accommodate projected growth; and
- (4) Improve existing capital facilities and recreational amenities.

#### Fishing

The fishing industry in Carolina Beach consists of two distinct components - commercial fishing and sportsfishing. Each of these components faces a very different future. Due to a number of factors, including reduced catches and expensive dockage, the commercial fishing industry is in a decline across North Carolina; Carolina Beach is no exception to that statewide trend. On the other hand, the sportsfishing industry in Carolina Beach is enjoying a boom period, with several new boats being added to the Town's fleet.

The growing real estate and tourist industries in Carolina Beach have helped contribute to the commercial fishing industry's decline. As waterfront property increases in value, commercial boat dockage fees must also increase. As more waterfront property is consumed for residential and tourist land uses, there is less space available for commercial marinas. Even existing marinas are being pressured to include residential uses in their operation: One of the Town's three commercial marinas, Yacht Haven Marina, has recently received approval of plans that would allow the construction of condominiums at the marina site.

Only through a carefully-conceived program of land use controls and incentives can the Town create inducements for the commercial



fishing industry to remain a viable part of the Town's economy. Geographically, the amount of shorefront having access to deep water, along with the relatively short distance from the shorefront areas to the ocean inlet and the Cape Fear River, provides the Town with a number of natural advantages for its commercial fishing industry. Any land use regulations that are proposed must recognize and build upon these advantages.

The booming tourist trade has been a boon rather than a curse for the Carolina Beach sportsfishing industry. This industry is centered at the Town's public marina, where the berthed headboats and charter boats receive excellent exposure to the tourists visiting the Town. The fact that the marina is public improves the competitiveness and quality of this industry because no one boat owner or group of owners can gain control of the dockage and force competitors into less advantageous locations.

The Town can take two major actions to help maintain the prosperity of the sportfishing industry. The marina should remain in public hands to insure competitiveness and the existing deteriorated and the potentially dangerous condition of the marina must be corrected. This latter action is paramount if the public marina is to continue to reflect positively on the Town and its sportfishing industry.

#### Retail Sales

The Town's retail sector has experienced a tremendous increase in the last few years. Two major shopping centers, Pleasure Island Plaza and Federal Point Station, have recently opened their doors to customers. Other retail growth is evident, particularly along Lake Park Blvd.

In other areas, however, retail business is showing signs of decline. The new shopping centers have attracted businesses away from the Amusement and Central Business Districts. Lack of parking, deteriorated exteriors and interiors, and isolation from the main tourist areas have led to the decline of the Town's older existing retail centers.

If the Amusement and Central Business Districts are to be revitalized for retail trade, more parking will have to be provided, an improved system of vehicular and pedestrian traffic circulation will be necessary, and better upkeep of the various shops must be encouraged. It will also be necessary to restrict the amount of new commercial zoning in other areas of the Town in order to direct new businesses to the Amusement and Central Business Districts.

#### POLICIES AND IMPLEMENTATION PROCEDURES

In order to assist the private sector in maintaining the complementary relationship that exists between the Town's primary industries, and to assure that any new industries that locate within the Town also complement these existing industries, the following policies and implementation procedures are established for the Town of Carolina Beach. Policies are official guidelines

set down for present and future decision-making; they are broad in scope to allow the degree of flexibility necessary to adequately accommodate changing conditions in a rapidly-growing resort area like Carolina Beach. Implementation procedures are directives to the Town Manager and staff as to how the policies are to be administratively enacted; they are necessarily specific to the issues in question.

#### Policies

- (1) PRESERVE, PROTECT, AND AUGMENT WHEREVER POSSIBLE, THE COMPLEMENTARY RELATIONSHIP BETWEEN THE TOWN'S VARIOUS INDUSTRIES.

This policy expresses the Town's intent to establish land use and other regulations, to establish a promotional campaign, and to provide improved services and capital facilities that will promote the natural interrelationship of the Town's primary industries.

- (2) PRESERVE, PROTECT, AND AUGMENT THE TOWN'S IMPORTANT NATURAL RESOURCES.

The Town of Carolina Beach recognizes that its economic base is highly dependent upon the natural amenities of its geographic location on the coast of North Carolina. Without these amenities, the Town's economy would cease to function. Therefore, the preservation of the Town's water quality, its shorefront access, its open space, and its views and vistas is recognized as being of great importance to the continued prosperity of the people involved in the Town's industries. The policies and implementation procedures outlined in the Natural Resources Element (pp. 5-9) should be utilized to achieve this goal. See also Implementation Procedure 8 below.

- (3) PROMOTE DIVERSIFICATION OF THE TOWN'S ECONOMIC BASE.

Diversification of any town's economic base tends to insulate that town from the effects of a decline or a recession in other industrial sectors. Responsible action by the Town Council on this issue involves taking advantage of opportunities to expand the Town's economic base in ways which do not create negative effects on the Town's existing industries or natural resources.

- (4) ENCOURAGE LAND USE COMPATIBILITY BETWEEN THE INDUSTRIAL/COMMERCIAL SECTORS AND THE RESIDENTIAL SECTOR.

The Town Council shall adopt all necessary regulations including zoning ordinances and subdivision regulations to ensure compatibility between the Town's various industries and other land uses within the Town in order to promote a continued healthy relationship between the industrial and commercial sector and other Town interests.

#### Implementation Procedures

- (1) Encourage the concentration of tourist facilities in an area or areas which allow for complementary interaction between those tourist land uses and the Town's Central Business and Amusement District uses.

One of the reasons for the decline of the Central Business and Amusement Districts is due to those districts' isolation from the

tourist trade. The Town Manager and staff are directed to produce for consideration regulations and incentives that will concentrate tourist uses in the vicinity of the Central Business and Amusement Districts and encourage easy pedestrian and vehicular traffic circulation between the districts.

- (2) Reconsider the purpose of the MB-1 zoning district in light of existing development trends and future growth of the Town's fishing industry.

Residential development in the MB-1 (Marina Business) zoning district has created the possibility of land use incompatibilities arising between residential and commercial marina uses. The Planning and Zoning Commission and Town Manager and staff are directed to make recommendations to the Town Council which will serve to reduce the potential for land use incompatibilities, while encouraging new and continued development of marina facilities for commercial fishing.

- (3) Develop and implement a public relations campaign designed to promote the natural resources and pro-industrial attitudes of the Town of Carolina Beach in an effort to attract an expanded economic base.

The Town Manager and staff, in conjunction with the Chamber of Commerce and Board of Realtors, are directed to prepare a brochure describing the advantages of locating in Carolina Beach that will be disseminated to various commercial and industrial concerns. Of primary importance in this promotional effort is the attraction of new tourist and commercial fishing operations, along with a detailed description of the siting advantages within the Town for an industrial headquarters. Development of advertising campaigns and direct contact with appropriate firms and local/regional economic development agencies are also considered important components of this implementation procedure.

- (4) Redevelopment of the Central Business and Amusement Districts is to be strongly encouraged.

The Town Manager and staff are directed to prepare for consideration regulations and incentives to encourage revitalization of the Town's Central Business and Amusement Districts. Solutions to parking, pedestrian access, deteriorated structures, and other problems should be explored and evaluated. Grant funding sources for correcting these problems should also be carefully examined. New commercial growth should be channelled into these areas by restricting the amount of land available for retail commercial use in other areas of the Town and by providing other suitable incentives for commercial investment in these areas.

- (5) Provide for the continued public ownership of the Town's marina.

Because the public ownership of the Town's marina pays important dividends in the way of increased competitiveness between the various sportsfishing operations using the marina and in ensured compatibility between the marina operations and surrounding land uses, the continued public ownership of the Town's marina is considered essential. The Town Manager and staff are directed to take all necessary steps to improve the condition of the marina in the most cost-effective manner, consistent with an approved capital improvement program.

- (6) Implement the directives of the Natural Resources and Recreation Elements.

Because the protection of the Town's natural resources and the provision of improved recreational facilities are considered essential to the continuation of a healthy Carolina Beach economy, the Town Manager and staff are directed to pursue the implementation procedures established in those Elements.

- (7) Establish and maintain property-owner profiles of new purchasers in Carolina Beach.

The Town Manager and staff are directed to contact the Pleasure Island Board of Realtors with a proposal for the Town Planner's office to serve as a clearinghouse for property-owner profile sheets to be collected by individual realtors. These profile sheets would contain population characteristic information such as residential status, economic grouping, age, and occupation. This information would be useful to both the Town and the Town's real estate industry in determining the interests, needs and characteristics of new residents and property owners. A quarterly report summarizing the profile sheets would be made by the Town Planner's office to all contributing real estate firms.

- (8) Request State classification of Myrtle Grove Sound from its current SA classification to a proposed SC classification.

The Town Manager and staff are directed to continue their efforts to achieve reclassification of the Myrtle Grove Sound water quality classification. For reasons more fully described in Appendix 11 (p. 192), the Town believes that "downgrading" the current SA classification to an SC classification will: (a) Result in a more accurate statement of the Sound's actual water quality condition; and (b) Remove needless barriers to types of development which are considered essential for the continued growth of the Town's tourist and real estate industries.

- (9) Prepare for consideration additional ordinances, resolutions and incentives, as needed, to protect, preserve, and enhance the commercial and industrial atmosphere in Carolina Beach and to ensure compatibility between those land uses and the residential land uses within the Town.

The Town Manager and staff are directed to keep a continued close watch on the Town's industrial and commercial growth as this growth effects the Town's economy, natural resources, and residential land uses. Preparation for consideration of new ordinances, resolutions, and incentives that provide positive direction to this growth is strongly encouraged.

## RECREATION

As Carolina Beach develops into a coastal resort town, new and more varied recreational facilities will be demanded by its residents and visitors. For the Town to achieve its potential as an outstanding place in which to live, visit and work, its current recreational amenities must be developed, upgraded and augmented. It is also important for the Town to maintain a balance between tourist-oriented recreational facilities and those provided more-or-less exclusively for year-round residents, as each of these groups has special needs and makes a unique contribution to the Town's economy and culture.

This Element of the Town of Carolina Beach Land Use Plan examines the current level of recreational facilities provided by the Town. It establishes policies and procedures for improving and adding to these facilities. Finally, it recognizes that Carolina Beach must insure adequate recreational opportunities for its citizens and its visitors if the Town is to continue to enhance its progressive image across the State and the nation.

### EXISTING RECREATIONAL FACILITIES

There are several sources of recreational amenities within the Town's planning jurisdiction. The Town provides access facilities along the beach and sound and has developed parks and playgrounds at several spots within the Town limits. The County is developing beach access facilities in the Wilmington Beach area. The State Wildlife Resources Commission maintains a boat launching ramp on Myrtle Grove Sound and the State Parks and Recreation Division operates the Carolina Beach State Park, a major camping, hiking, and boating site. The Federal government owns land suitable for passive recreational enjoyment, in both the Sunny Point Military Ocean Terminal Buffer Zone and the Army Corps of Engineers spoil easement along Snow's Cut. Several private developments also contain recreational facilities for the use of their residents and visitors.

The existing public recreational areas shown on Map R-1 (p. 24) and are described in further detail below.

#### Town of Carolina Beach

The Town of Carolina Beach provides the following recreational facilities:

- (1) Chappell Park - Until recently, this park was called Dow Road Park. It is a regional park of approximately ten acres with a softball field, picnic shelter and tables, and public parking. Several major improvements are scheduled for Chappell Park including a Youth League baseball field and a multipurpose field. Chappell Park is located between Clarendon and Columbia Avenues just east of Dow Road.

- (2) Wilson Park - This is a neighborhood park of approximately 1/2 acre in size, containing playground equipment. Wilson Park is located between Wilson and Lumberton Avenues west of Third Street.
- (3) Hines Park - Hines Park is a small centrally-located community park of nearly one acre in size. It contains the Town's Community Building, Library, a multipurpose court and some playground equipment. Hines Park is located between Cape Fear Blvd. and Raleigh Avenue west of Third Street.
- (4) Carolina Beach Lake Park - A lakeside community park that circles Carolina Beach Lake. It has nature trails, docks, gazebos and picnic areas under construction and an existing recreational instruction program (sailboarding).
- (5) Beach Access - The Town has twenty-three beach access areas, seven of which have been developed with dune crossovers and on-site parking; two more sites will be developed this year.
- (6) Sound Access - The Town has eleven sound access areas, two of which will be developed with docks/gazebos and on-site parking this year.
- (7) The Public Marina - The Town owns and operates a marina facility at the southern terminus of Myrtle Grove Sound. This facility not only provides shorefront access for the private boat operators and fishermen that lease boat slips from the town, but also provides a scenic area for the public to view Myrtle Grove Sound and the picturesque activities of the fishing and recreational boats utilizing the marina.
- (8) The Public Beach - The Town of Carolina Beach is unique in that it is one of only two cities in North Carolina that owns its beachfront area; the public beach runs from the dunes to the mean high water line. The public beach is maintained for the enjoyment of the residents and visitors to the Town. It has recently been the focal point for an \$11 million beach renourishment project; additional renourishment occurred in the spring of 1985. Due to its recent improvement, this public beach is perhaps the finest recreational beachfront in North Carolina.

#### New Hanover County

New Hanover County is in the process of constructing two beach access facilities (dune crossovers, parking, and gazebos) in the Wilmington Beach area. These access sites will be located at the eastern ends of Alabama Avenue and Ocean Blvd. A third such facility

may be constructed at the eastern terminus of Tennessee Avenue if the facility is not constructed by a private developer as part of a conditional use permit request.

The County is also responsible for the undeveloped beach area at the north end of the Northern Extension. This large, natural beachfront and accompanying estuarine wetland has been a traditional beach access spot for surf fishermen and off-road vehicle enthusiasts. While some damage to the dune and estuarine systems occurs through unrestricted access to this area, with proper enforcement of existing and proposed regulations keeping vehicles off dunes and marshy areas, there is no reason why recreational use of this area cannot co-exist with these important ecological systems. This area is likely to be the only site within the Town's corporate jurisdiction or extraterritorial limits in which a regional beach access facility may be constructed due to high land costs in other areas.

#### State of North Carolina

The North Carolina Division of Parks and Recreation operates the Carolina Beach State Park to the northwest of the Town. The State Park contains 337 acres of land available for camping, hiking and other outdoor recreational activities. A marina with boat launching facilities is also provided on the State Park grounds.

The Wildlife Resources Commission operates a boat ramp with parking facilities near Snow's Cut and Myrtle Grove Sound. A portion of the parking lot is located in the Snow's cut spoil easement. This facility receives a great deal of use by residents of and visitors to Carolina Beach.

#### Federal Government

The Federal government owns or controls some 850 acres within the Town's extraterritorial jurisdiction which are used for passive recreation and serve as important open spaces for aesthetic enjoyment. These areas are: (1) The Army Corps of Engineers spoil easement along the southern bank of Snow's Cut and (2) the Sunny Point Military Ocean Terminal Buffer Zone to the west of Town.

Both the Town and the State have developed recreational facilities on portions of this Federal land. The Town's Chapell Park, its major active recreational facility, is located within the Buffer Zone. Parts of the Carolina Beach State Park are located in the Snow's Cut spoil easement and the Wildlife Resources Commission boat ramp is also partially in the spoil easement.

## RECREATIONAL FACILITY NEEDS

Given the anticipated growth of the Town, both in year-round and seasonal residents, the Town needs to make the following additions and/or improvements to its recreational facilities in order to meet the minimum guidelines established by the N.C. Division of Parks and Recreation. (Minimum Local Standards for Acquiring and Developing Park and Recreation Areas in North Carolina; consulting Services Section, N.C. Division of Parks and Recreation; 1980; page 3.) See Map R-1 (p. 24) for the location of many of these proposed facilities.

### Land Acquisition

Unless the Department of the Army can be persuaded to relax its current policies towards recreational use of the Buffer Zone, the Town should acquire land suitable for the construction of a large park complex to replace Chappell Park. Because Chappell Park is located in the Buffer Zone, its recreational potential is very limited due to U.S. Army requirements that restrict the number of persons who can congregate in any one location at any one time. The amount of land to be acquired, if land acquisition becomes necessary, should be, at minimum, fifteen acres in order to accommodate the needed facilities and any further expansion.

The Town should acquire the piece of property located at the southwest corner of the intersection of Atlanta Avenue and Lake Park Blvd. This property would then be developed into a community park. The ditch that borders this property to the west should be piped and filled in order to provide a public parking area for this park, to complement the public parking to be provided on the north side of Atlanta Avenue by a private developer, and to provide additional parking for Central Business District customers and beachgoers. Total public parking available in this area would be in excess of sixty (60) spaces.

Six sites will be needed for eventual development into neighborhood parks. The suggested locations for these sites are as follows:

- (1) In the vicinity of the intersection of Texas Avenue and Bonito Lane.
- (2) In the vicinity of the intersection of North Carolina Avenue and Bonito Lane.
- (3) In the vicinity of the intersection of Magnolia Avenue and Eighth Street.
- (4) In the vicinity of the intersection of Plymouth Avenue and Eighth Street.
- (5) East of Lake Park Blvd., west of St. Joseph's Street, north of the Federal Point station shopping center, and south of Lewis Drive.
- (6) In the vicinity of the intersection of Spencer Farlow Drive and Drill Shell Lane (formerly Fourth Avenue).



### New Facilities

Until land can be acquired for a new large park complex, Chappell Park is scheduled to be utilized for the following new facilities:

- (1) Youth League baseball field with concession stand/bathrooms, a storage shed/scorer's tower, and dugouts.
- (2) Picnic shelter, volleyball courts and playground area.
- (3) Football/soccer field.
- (4) Storage shed/scorer's tower at existing softball field.

All facilities, excepting the fields themselves, should be designed and constructed so as to be easily transportable to the new park complex.

The Town should strongly encourage the construction of a public golf course within the Town by either public or private agencies in order to help Carolina Beach achieve its potential as a first-class resort area.

The Town has need of between five and seven tennis courts. These courts should be lighted and constructed in a permanent location (i.e., not at Chappell Park).

The Town has need of at least six multipurpose courts (basketball, hopscotch, etc.) Two of these courts should be located at neighborhood parks. Two of the courts should be located at the Community Building site. The remaining two courts should be located at the new large park facility. Bleachers and lighting should be provided for two of these courts.

In conjunction with the New Hanover County School system, a gymnasium should be constructed on land to be acquired near the Carolina Beach Elementary School site.

The Community Building site should be utilized for an expanded Community Center that would include kitchen facilities, permanent housing for the nutrition center, several multipurpose rooms, and indoor shuffleboard courts.

The Town has need of six outdoor shuffleboard courts, two of which should be located at the Community Building site, with the remaining four courts to be located at the new large park complex.

A(n) (indoor) swimming pool is needed and should be constructed at the new large park complex.

Neighborhood parks should be constructed on land owned by the Town:

- (1) Between Greenville and Spartanburg Avenues adjacent to the Buffer Zone; and
- (2) Clarendon Avenue between 6th and 7th Street (existing well site).

Replacement equipment for two existing neighborhood parks will soon be needed.

The Town should continue to develop its shorefront access facilities in accordance with the policies established in its Five Year Shorefront Access Plan (adopted October, 1984) which is hereby made a part of this document by reference.

The provision of bikeways throughout the Town should be made according to the Town's Bikeway Plan (see Appendix 7, p. 151).

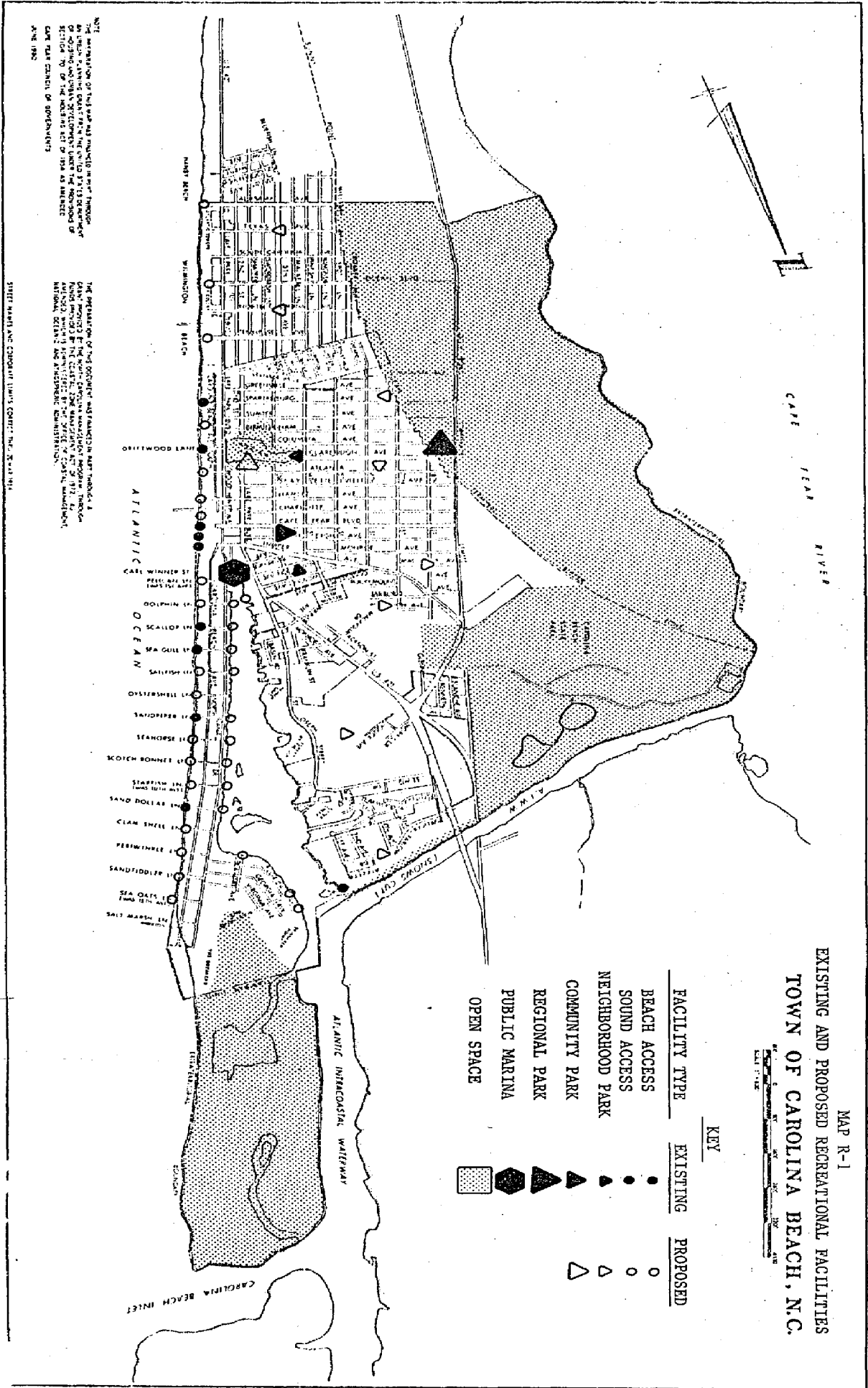
#### POLICIES AND IMPLEMENTATION PROCEDURES

In order for the Town to achieve the additions and improvements to its recreational system that are outlined above, the following policies and implementation procedures are established by and for the Town of Carolina Beach. Policies are official guidelines set down for present and future decision-making; they are broad in scope to allow the degree of flexibility necessary to accommodate changing conditions in a rapidly-growing resort area like Carolina Beach. Implementation procedures are directives to the Town Manager and staff as to how the policies are to be administratively enacted; they are necessarily specific to the issues in question.

#### Policies

- (1) STRIVE TO ATTAIN AND MAINTAIN RECREATIONAL STANDARDS ESTABLISHED BY THE N.C. DIVISION OF PARKS AND RECREATION.

These standards provide a useful yardstick by which the Town can measure the level of recreational service it provides. The Town shall utilize these standards as it considers improvements and additions to its existing recreational facilities over the next ten years.

[illegible]

THE OPERATIONS OF THE OCCUPANT WAS FINANCED IN PART THROUGH A GRANT PROVIDED BY THE NORTH CAROLINA RECREATION PROGRAM THROUGH FUNDS PROVIDED BY THE U.S. DEPT. OF THE INTERIOR, ACT OF 1912. AS A RESULT OF THE RECENT RECREATION ACT OF 1972, THE NATIONAL SYSTEM OF PUBLIC LANDS, WHICH IS ADMINISTERED BY THE OFFICE OF CONSERVATION, NATIONAL SYSTEM OF PUBLIC LANDS, NATIONAL SYSTEM OF PUBLIC LANDS, NATIONAL SYSTEM OF PUBLIC LANDS, NATIONAL SYSTEM OF PUBLIC LANDS.

(2) SEEK OUT LOCAL, REGIONAL, STATE, AND FEDERAL COOPERATION AND FUNDING FOR RECREATION PROJECTS.

The large number of visitors and tourists that utilize recreational facilities in the Town of Carolina Beach make the provision of recreational opportunities within the Town more than a strictly local responsibility. Outside agency cooperation and funding sources should be tapped so that the responsibility of providing adequate recreational development is shared equitably.

(3) PROVIDE FOR BALANCED RECREATIONAL DEVELOPMENT.

The Town of Carolina Beach recognizes that while the Atlantic Ocean beachfront is the Town's primary recreational amenity, the development of various other recreational sites and facilities is necessary for the Town to achieve a balanced mix of recreational facilities that will meet the wide range of needs of its citizens and visitors.

(4) PROVIDE FOR COMPREHENSIVE RECREATIONAL PLANNING.

The Town of Carolina Beach recognizes that effective provision of recreational opportunities requires that a number of issues peripheral to actual recreational activities be considered in a comprehensive manner. For instance, the provision of adequate parking for a park's users does not increase the amount of park facilities per se, but is nevertheless a key component in increasing the use of the park and cannot therefore be ignored.

(5) PROVIDE FOR COST-EFFECTIVE RECREATIONAL DEVELOPMENT.

The Town of Carolina Beach recognizes that recreation is an important and popular concern for its citizens and visitors and that it would be almost impossible to provide too many recreational opportunities. The Town also recognizes its financial limitations regarding recreation. Therefore, any recreational development program must concern itself with achieving the most effective and equitable level of recreational opportunity for the money budgeted.

(6) ENCOURAGE RECREATIONAL FACILITY SITING AND DESIGN THAT IS COMPATIBLE WITH EXISTING AND FUTURE LAND USE.

It shall be a policy of the Town to consider the full impact of its recreation program on existing and future land uses and to mitigate the negative and accentuate the positive effects of the program whenever feasible and desirable.

(7) CONTINUE TO MAINTAIN AND/OR PROVIDE SUPPORT FOR EXISTING RECREATIONAL FACILITIES.

It shall be a policy of the Town to take no action that would serve to eliminate or limit the use or effectiveness of existing recreational facilities without providing for alternate facilities of equal or greater benefit to the citizens of and visitors to the Town.

(8) PROVIDE FOR EQUITABLE RECREATIONAL DEVELOPMENT.

It shall be a policy of the Town to require new development to pay its fair share of the cost of providing adequate recreational facilities since such new development places increased pressure on existing facilities and establishes a need for future facilities.

Implementation Procedures

- (1) Plan and budget for additional improvements to existing recreation facilities according to the list of priorities indicated in Table R-1 (p. 28).

The Town Manager and staff are directed to plan and budget for further additions and improvements to the Town's existing stock of recreational facilities in keeping with both the recreational facility standards established herein and the Town's willingness and ability to pay for these additions and improvements as determined by the annual budgetary priorities of the Town Council. It is, however, the intent of the Town to provide all the recreational facilities described in Table R-1 within the ten year planning horizon of this document. Table R-1 therefore serves as a guide for setting administrative budgetary priorities.

- (2) Promote intergovernmental cooperation in the provision of recreational facilities.

- (a) The Town Manager and staff are directed to initiate contact with the Town of Kure Beach and New Hanover County regarding joint provision of much-needed recreational facilities on Pleasure Island.

- (b) The Town Manager and staff are directed to continue Town involvement in the State's Shorefront Access Grant Program and in any other State or Federal funding program that will enable the Town to achieve the intent of the policies established herein.

- (3) Develop comprehensive recreation plans and programs.

The Town Manager and staff are directed to continue to develop recreation plans and programs in keeping with the policies established herein. These plans and programs should, however, stress comprehensive provision of recreational facilities, linking recreation projects with each other and with other Town projects. For instance, it is inefficient and ineffective to develop a bikeway plan that calls for street widening after the adoption of a street paving plan that makes no provision for such widening.

- (4) Insure private provision of both public and private recreational facilities.

The Town Manager and staff are directed to continue to prepare for consideration ordinances and resolutions that will encourage creativity on the part of private developers and entrepreneurs in providing for public and private recreational opportunities. This will insure that further development of the Town will "pay its own way" with regard to the added demands such development places upon the Town's existing recreational facilities.

TABLE R-1

RECREATIONAL IMPROVEMENT PRIORITIES

1. Construction of a Community Center at Hines Park that will include kitchen facilities and permanent housing for the Nutrition Center, and two indoor regulation shuffleboard courts.
2. Construction of a Gymtorium on land to be acquired near Carolina Beach Elementary School in conjunction with the New Hanover County School System.
3. Construction of multipurpose courts (basketball, hopscotch, shuffleboard, etc.) at Hines Park, at Wilson Park and on land owned by the Town between Greenville and Spartanburg Avenues.
4. Provide replacement playground equipment at Chappell and Wilson Parks.
5. Continue development of new shorefront access facilities in accordance with the Town's officially-adopted Shorefront Access Plan.
6. Construction of two composition shuffleboard courts at Hines Park.
7. Construction of a swimming pool and weight room complex.
8. Construction of five to seven lighted tennis courts.
9. Acquisition of land for a new large park complex or provide for development of Chappell Park without U.S. Army restrictions.
10. Acquisition of land for six neighborhood park sites as outlined in this Element.
11. Acquisition of land for a community park and public parking at the north east corner of Carolina Beach Lake.
12. Construction of multipurpose courts, composition shuffleboard courts, and provision of playground equipment at the large park complex (or at Chappell Park) and at the new neighborhood parks.
13. Provision of bikeways according to the Town's Bikeway Plan (scheduled for Town Council consideration in late 1985).

## TRAFFIC CIRCULATION

As Carolina Beach grows from a fishing village into a coastal resort community, the Town's traffic circulation patterns will change. The Town will face an increased traffic volume, resulting in a need for more signalization of intersections, wider roadways, new road construction, and other alterations to the existing transportation network. These changes will be necessary to ensure that the Town continues to experience an orderly flow of traffic.

This Element of the Town of Carolina Beach Land Use Plan is therefore concerned with establishing policies and implementation procedures which provide for satisfactory traffic circulation. As further growth brings the Town's existing transportation facilities closer to their rated capacity, only well-planned improvements will preserve the convenience, ease of access and smooth traffic flow the Town currently enjoys.

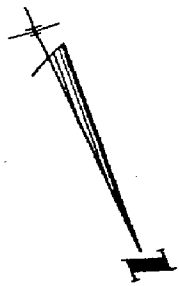
### EXISTING TRANSPORTATION FACILITIES

The Town's extraterritorial jurisdiction is bounded on the north by the Intracoastal Waterway, a major maritime transportation route, and there are numerous public and private marinas within the Town. Recently, there has also been discussion of the construction of a public airport with Federal and private funding in the vicinity of the Town. Despite the potential for these water and air transportation facilities to make a positive contribution to the Town's total transportation network, because of quantitative difficulties in estimating their impact, this Element will restrict itself to land-based transportation facilities - the Town's streets and sidewalks.

#### Streets

The Town currently contains some 46.34 miles of streets within its corporate limits and extraterritorial jurisdiction. Of this amount, some 11.26 miles are owned and maintained by the N.C. Department of Transportation (NCDOT). Another 25.35 miles are owned and maintained by the Town of Carolina Beach. The remainder, some 9.73 miles, are platted streets which have not been accepted by any public body. These existing streets are in various states of repair and passability, ranging from unimproved and impassable ("paper") streets to recently-paved, well-maintained roadways. See Map TC-1 for existing street location.





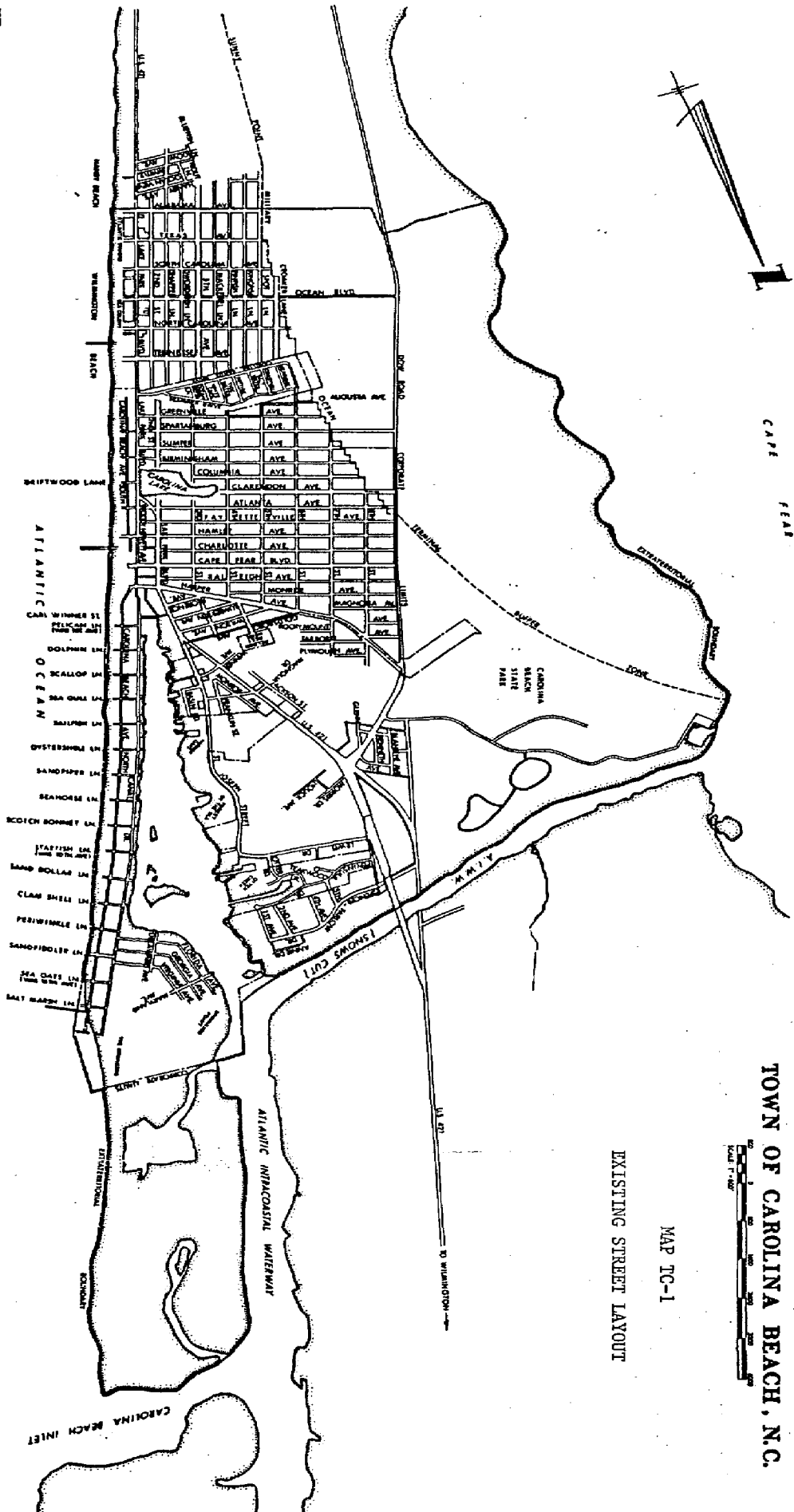
CAPE FEAR RIVER



# TOWN OF CAROLINA BEACH, N.C.

MAP TC-1

EXISTING STREET LAYOUT



THE TOWN OF CAROLINA BEACH, N.C. is a part of the County of New Hanover, North Carolina, and is located on the Cape Fear River. The town is bounded by the Atlantic Ocean to the south, the Cape Fear River to the east, and the County of New Hanover to the north and west. The town is a part of the County of New Hanover, North Carolina, and is located on the Cape Fear River. The town is bounded by the Atlantic Ocean to the south, the Cape Fear River to the east, and the County of New Hanover to the north and west.

The representation of the County of New Hanover, North Carolina, is a part of the County of New Hanover, North Carolina, and is located on the Cape Fear River. The town is bounded by the Atlantic Ocean to the south, the Cape Fear River to the east, and the County of New Hanover to the north and west. The town is a part of the County of New Hanover, North Carolina, and is located on the Cape Fear River. The town is bounded by the Atlantic Ocean to the south, the Cape Fear River to the east, and the County of New Hanover to the north and west.

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## Sidewalks

There are 5.9 miles of sidewalks within the Town of Carolina Beach. These sidewalks are primarily located within the Town's Central Business District and multifamily and tourist areas. Map TC-2 shows the location of these existing sidewalks.

## TRAFFIC CIRCULATION IMPROVEMENTS

There are three primary ways in which the traffic circulation system in Carolina Beach can be directly improved: Maintenance; Signalization/Flow Alteration; and Construction. Maintenance involves the establishment of a regular maintenance program which ensures that existing facilities are kept in good working order. Signalization/Flow Alteration involves such things as placing stop signs and traffic signals at intersections, altering speed limits and creating one way streets. Construction involves new road construction and the widening of existing streets.

There are several traffic circulation problems in Carolina Beach at either the current time or anticipated in the near future. Each of these situations can be modified through maintenance, signalization/flow alteration or construction. These situations are discussed below.

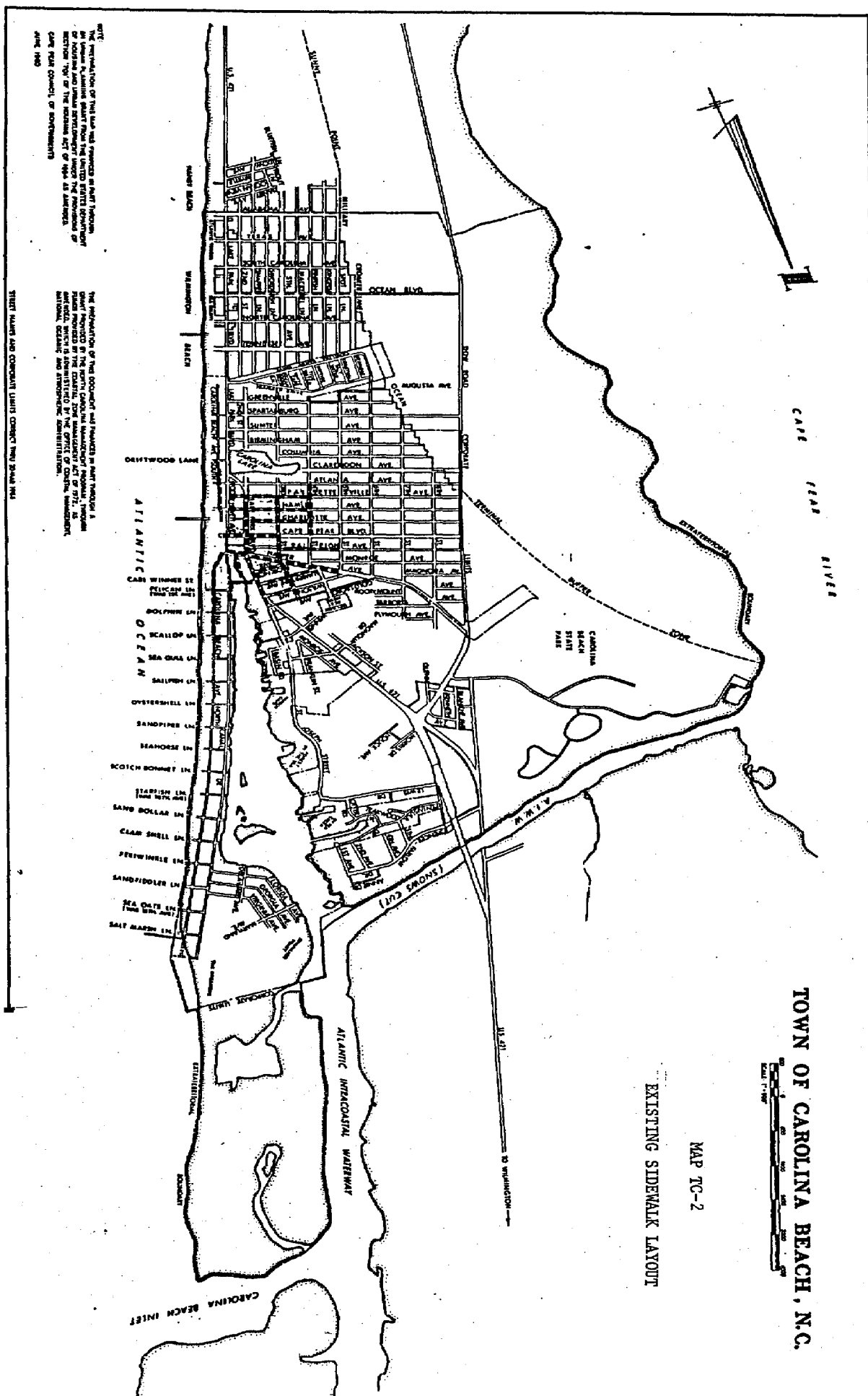
### Northern Extension

Perhaps the most troublesome traffic circulation problem for Carolina Beach exists on the Northern Extension. There, dense resort development has created the potential for high traffic volumes during the summer tourist season. Those volumes, when combined with side friction caused by numerous driveway cuts and limited parking, a poorly maintained road surface, and vacationers unfamiliar with the street system, serve to impede good traffic flow.

Of particular concern is the intersection of Carl Winner Street and Canal Drive. This intersection is the primary access point to and from the Northern Extension. During periods of high traffic volume, delays and unsafe vehicular movement are common at this intersection.

A second major concern with the Northern Extension transportation system involves emergency vehicle access. Again, during periods of high traffic volume, it is difficult for emergency vehicles to quickly respond to calls for assistance due to street congestion.

In order to resolve these transportation problems, it will be necessary for the Town to take the following actions:



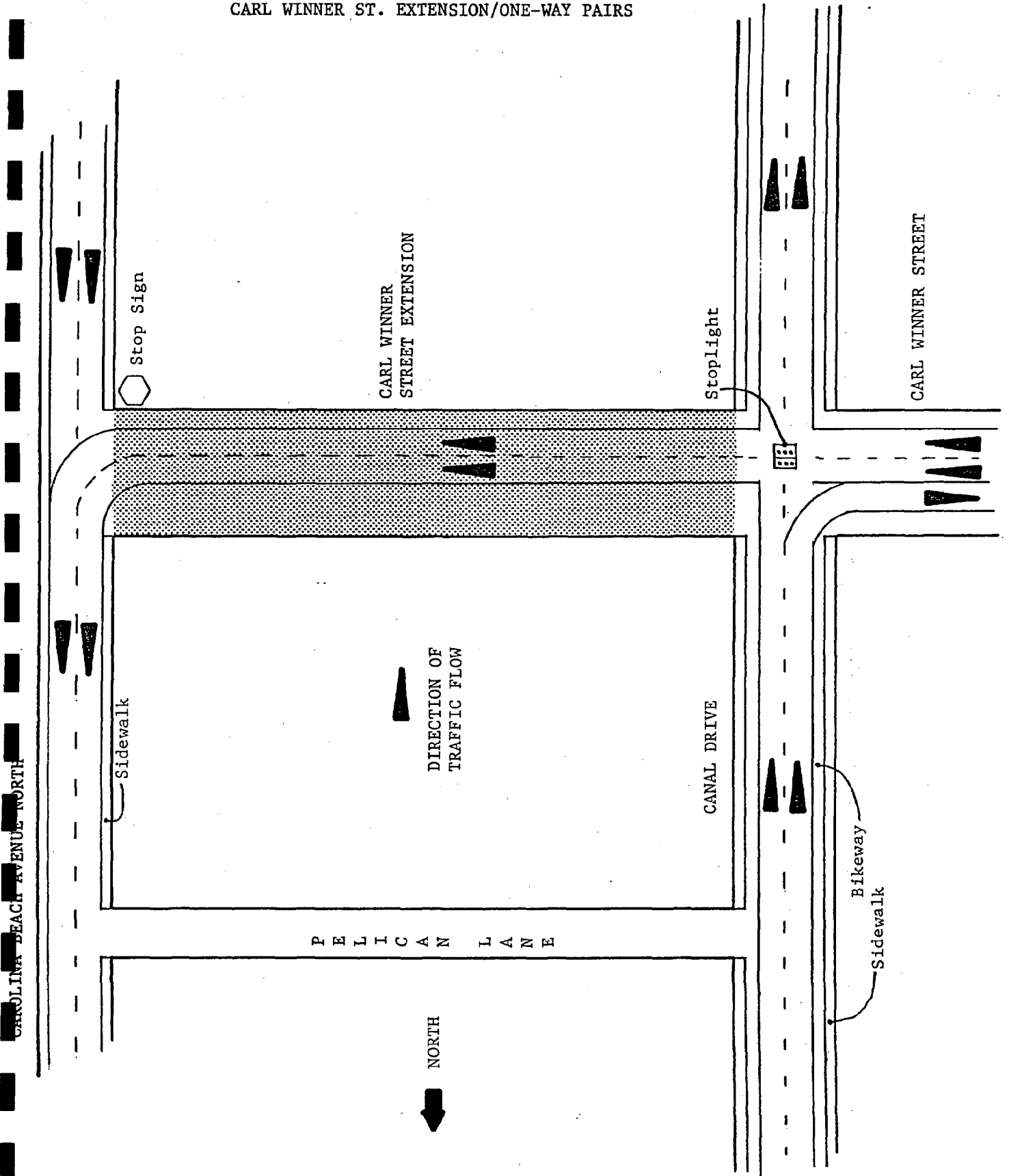
- (1) If Carl Winner Street is to continue to serve as the primary access point to the Northern Extension, a direct connection with Carolina Beach Avenue North is necessary. For this to occur, Carl Winner Street must be extended between Canal Drive and Carolina Beach Avenue North as shown on Map TC-3.
- (2) In order to improve the functioning and safety of the intersection of Canal Drive and Carl Winner Street, signalization of the intersection is essential.
- (3) Canal Drive and Carolina Beach Avenue North should each be converted to a two lane, one-way street, with Carolina Beach Avenue North heading north and Canal Drive heading south. This conversion will drastically improve both the traffic handling capacity of and emergency vehicle access to the Northern Extension roadway system.
- (4) Street repair work is badly needed on Canal Drive and Carolina Beach Avenue North in order to correct the problems created by heavy use and by poor design and maintenance. Smoother, well-drained streets will promote better traffic flow.
- (5) When the repair work described above is performed, consideration should be given to the construction of sidewalks on the west side of Canal Drive and on the east side of Carolina Beach Avenue North, along with the construction of bikeways on both sides of Canal Drive. These improvements will serve to encourage non-automotive traffic and thus reduce the amount of automobile traffic in the Northern Extension.

#### Lake Park Blvd.

A second major traffic problem for the Town involves Lake Park Blvd., or U.S. 421. This roadway is the Town's only route to the mainland, serves as the primary link between Carolina and Kure Beaches, and provides access to the Town's tourist and commercial areas. These factors consequently make Lake Park Blvd. the most heavily-travelled street in Carolina Beach. However, the lack of a center turning lane and adequate signalization along most of Lake Park Blvd. creates dangerous cross-traffic turning situations along with increased potential for "rear-ending" accidents.

MAP TC-3

CARL WINNER ST. EXTENSION/ONE-WAY PAIRS



Probably the most pressing current transportation need in Carolina Beach is for the installation of a traffic signal at Lake Park Blvd.'s intersection with Federal Point Shopping Center, the Town's largest commercial complex. The NC DOT will install this light by Fall, 1985. Signalization is also or will soon be needed at the following Lake Park Blvd. intersections:

Dow Road  
Atlanta Avenue  
Winner Avenue  
Ocean Blvd.  
Spartanburg Avenue

Another high priority transporation need involves widening Lake Park Blvd. from the southern terminus of the Snow's Cut Bridge to Alabama Avenue in order to accommodate a center turn lane. This turn lane will allow a storage area for turning vehicles that is out of the flow of traffic, dramatically increasing the safety of the roadway, as well as improving its traffic volume handling capacity. Frontage roads should be considered in some northern U.S. 421 sections should provision of a turn lane prove infeasible.

Speed limit reduction along that portion of Lake Park Blvd. from the southern terminus of the Snow's Cut Bridge to Dow Road will also improve the safety of the street. The speed limit for this roadway section should be reduced in order to give motorists adequate opportunity to decelerate from the highway speeds on U.S. 421 north of the Snow's Cut Bridge.

#### Dow Road

Recent widening of Dow Road has improved its safety. Further widening, to a three or four lane roadway, will be necessary in approximately ten years to handle the increased traffic volumes expected for both Carolina and Kure Beaches. Some speed limit reduction and signalization will also be needed prior to that time.

Flashing traffic signals should be installed on Dow Road at Harper Avenue and at Ocean Blvd. Full signalization of these intersections will be needed in the next few years.

A speed limit reduction from 55 to 45 miles per hour on Dow Road between Magnolia Avenue and Lake Park Blvd. would improve the safety of the roadway.

#### St. Joseph's Street

The intersection of St. Joseph's Street and Lake Park Blvd. creates potential safety problems due to the sharp angle of the intersection and its location on a curve. This problem can be reduced by making St. Joseph's Street one way heading north from Lake Park Blvd. to Winner Avenue as shown on Map TC-4.

MAP TC-4

ST. JOSEPH'S STREET

DIRECTION  
OF  
TRAFFIC FLOW

NORTH

PORTION OF STREET TO BE MADE ONE-WAY

ST. JOSEPH'S STREET

LAKE PARK BLVD. (U.S. 421)

Proposed Stoplight

WINNER  
AVENUE

3-Way  
Stop

As additional medium-density residential and light commercial growth occurs in the vicinity of St. Joseph's Street, the traffic handling capacity of the roadway may begin being reached within the next ten years. It will then become necessary to widen the street to a four lane configuration to provide for better traffic flow.

#### Winner Avenue

Winner Avenue is currently a little-used street. However, as it is extended and improved as outlined in the Town's officially-adopted Thoroughfare Plan (1973), it has the potential of becoming one of the Town's most used interior streets. Map TC-5 shows how Winner Avenue should be extended to interconnect with Sixth Street and Tarboro Avenue. This interconnection can be made at little or no public expense by requiring right-of-way dedication and street construction in the affected properties as part of the subdivision process or as conditions of annexation or planned development approval.

#### Parking

Traffic circulation in the Town's Central Business District and tourist areas is hampered by a lack of parking. Not only is it inconvenient for motorists to have to spend considerable driving time looking for a parking space, but traffic bottlenecks and unsafe vehicular movement can result from such searching. In order to improve this situation, the Town should be alert to any opportunity to establish centrally-located parking lots or decks that will improve the Carolina Beach parking situation.

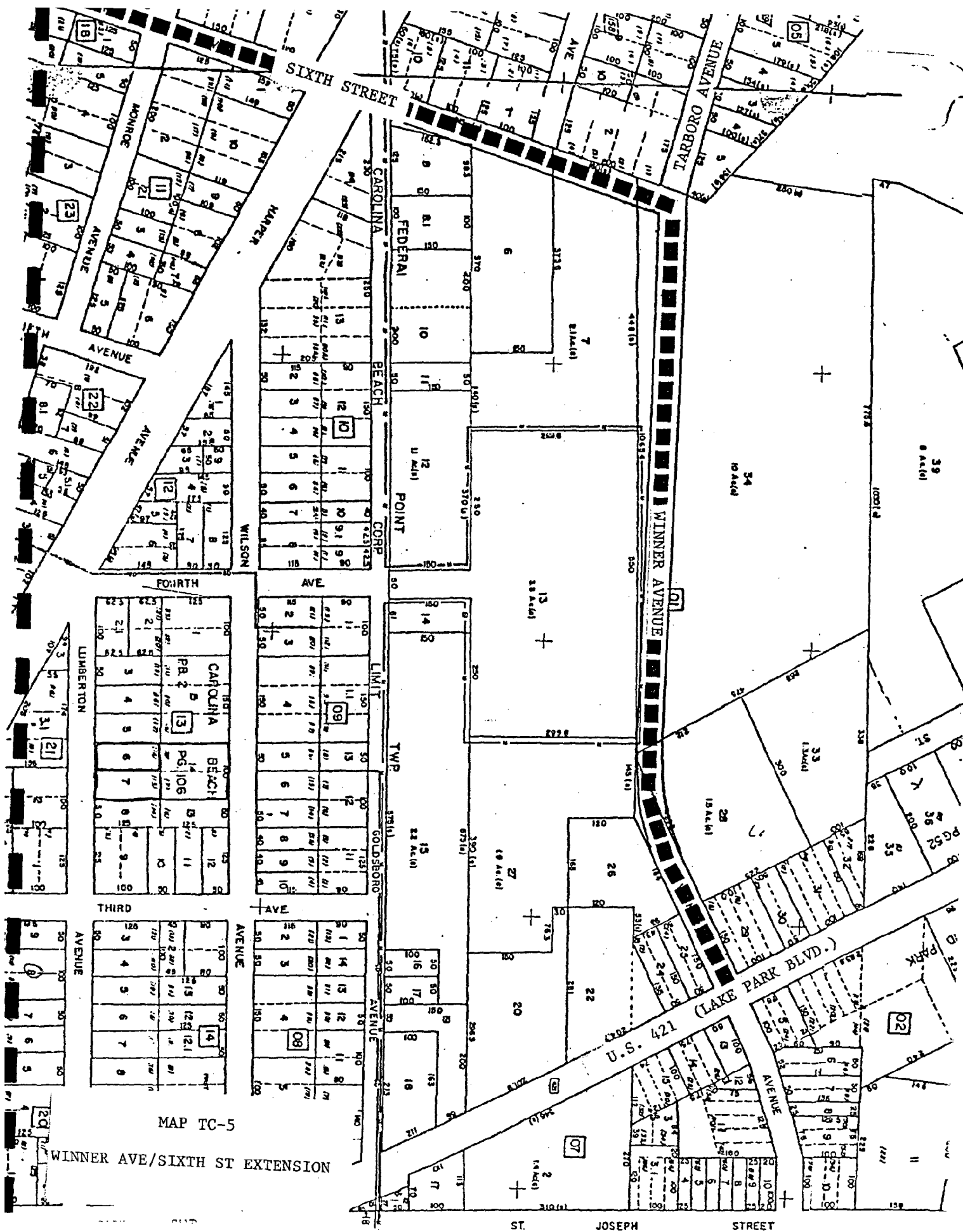
#### Paving and Resurfacing

A number of the streets in the Town are unpaved and many others are in need of resurfacing. A smooth street functions better with regard to both driver comfort and traffic handling capability than a rough street. Paving and resurfacing of the Town's streets, as needed, will therefore improve the functioning of those streets.

#### Alternative Transportation Modes

The primary mode of transportation in Carolina Beach for foreseeable future will be the automobile. However, by encouraging other forms of transportation - such as walking, bicycling and mass transit - the Town can reduce the number of automobiles on its streets and thereby extend some required street improvements further into the future. Pedestrian traffic can be facilitated by the improvement of existing sidewalks and the provision of new ones in the Central Business District and the tourist areas. Bikeways should be considered when





MAP TC-5

WINNER AVE/SIXTH ST EXTENSION

improvements are made to Canal Drive, Dow Road, St. Joseph's Street, Sixth Street/Winner Avenue Extension and other Town streets. Mass transit enterprises that transport day visitors, shoppers and tourists to Carolina Beach from Wilmington and other parts of New Hanover County should also receive support from the Town.

### Maintenance

For streets and sidewalks to handle traffic properly, they must be smooth and relatively free of obstructions such as sand and gravel. Consequently, it is necessary for the Town to establish a regular maintenance program of resurfacing, patching and obstruction removal. Such a program will also serve to extend the functional life of the transportation facilities by reducing the negative effects that weather and heavy use can have on the street base and overall sidewalk integrity.

### POLICIES AND IMPLEMENTATION PROCEDURES

In order that the traffic circulation improvements described above can be accomplished, the following policies and implementation procedures are established by and for the Town of Carolina Beach. Policies are official guidelines set down for present and future decision-making; they are broad in scope to allow the degree of flexibility necessary to adequately accommodate changing conditions in a rapidly-growing resort area like Carolina Beach. Implementation procedures are directives to the Town Manager and staff as to how the policies are to be administratively enacted; they are necessarily specific to the issues in question.

### Policies

- (1) ESTABLISH TRAFFIC CIRCULATION IMPROVEMENT PRIORITIES THAT PROVIDE FOR THE TIMELY ALLOCATION OF RESOURCES IN MEETING THE TRANSPORTATION NEEDS OF CAROLINA BEACH.

While no opportunity to accomplish the traffic circulation improvements described in this Element should be missed, this policy recognizes that limited resources on the part of the Town, the State of North Carolina and the Federal government require that transportation improvements be addressed in terms of an established priority system. For this purpose, Table TC-1 (p. 42) has been generated. By establishing Table TC-1 as Carolina Beach's recommended traffic circulation priority list, the Town provides for the cost-effective commitment of these limited resources in achieving needed transportation improvements in a timely manner.

- (2) SUPPORT THE EFFORTS OF OTHER LOCAL, STATE, AND FEDERAL AGENCIES THAT IMPROVE THE FLOW OF TRAFFIC IN CAROLINA BEACH AND IN THE VICINITY OF THE TOWN.

The Town shall support those actions of other governmental bodies that promote the smooth functioning of transportation systems within the Town and in the vicinity of the Town.

- (3) ENCOURAGE ALTERNATIVE TRANSPORTATION MODES IN AN EFFORT TO REDUCE AUTOMOBILE TRAFFIC VOLUMES.

The Town accepts the fact that automobiles will provide the dominant mode of transportation for the foreseeable future. However, the encouragement of the use of alternatives to the automobile, such as walking, bicycling and mass transit, will result in fewer cars on the Town's streets, a benefit which is important for both economic and aesthetic reasons. A significant side effect of this policy will be the promotion of a "resort atmosphere" in Carolina Beach.

- (4) INSURE THAT THE TYPE AND DESIGN OF THE EXISTING TRANSPORTATION SYSTEM AND THE PROPOSED IMPROVEMENTS TO THAT SYSTEM RESULT IN A TRAFFIC CIRCULATION PATTERN THAT IS WELL-SUITED TO THE DESIRED LAND USE ARRANGEMENTS WITHIN THE TOWN.

It is essential that the Town's traffic circulation system be well-matched to existing and future land uses in order to provide for adequate traffic handling capacity and to enhance the social and natural environments within the Town. Provision of adequate parking is an important component of this policy.

- (5) PROVIDE FOR FUTURE LAND USES THAT WILL FUNCTION PROPERLY WITH THE EXISTING AND PROPOSED TRAFFIC CIRCULATION SYSTEMS.

The Town shall recognize the capacity limitations of the existing and proposed transportation systems in determining appropriate development patterns and timing for Carolina Beach. This converse policy to Policy (4) above establishes the importance of good land use planning to a properly-functioning traffic circulation system.

#### Implementation Procedures

- (1) Initiate coordinative efforts with local, State and Federal agencies to insure that the needed traffic circulation improvements can be accomplished in a timely manner.

The Town Manager and staff are directed to join with other local governments in promoting improved regional transportation and to establish the necessary networks with State and Federal agencies to insure adequate funding of required street improvement projects in Carolina Beach.

- (2) Utilize accepted transportation planning standards in designing and providing for streets, intersections, sidewalks, bikeways, and parking facilities.

Facility design and construction shall utilize the accepted standards established for each facility type in order to encourage the most effective, cost-efficient transportation system possible.

- (3) Budget and otherwise plan for transportation system improvements as prioritized in Table TC-1.

The Town Manager and staff are directed to begin the implementation process for accomplishing the traffic circulation improvements as prioritized in Table TC-1.

- (4) Program and budget for the maintenance of Town-owned streets.

The Town Manager and Public Works Director are directed to establish a maintenance program and budget to insure timely repair and resurfacing of Town streets and sidewalks.

- (5) Consider the land use and annexation policies established in the Future Land Use Element when planning and budgeting for transportation improvements and maintenance.

The Town Manager and staff are directed to provide for proper coordination between the directives of the Element and the Future Land Use Element.

- (6) Prepare for consideration additional ordinances, budgets, and resolutions, as needed, to improve and maintain the traffic circulation system of the Town.

The Town Manager and staff are directed to prepare for consideration additional ordinances, as needed, to encourage development of Carolina Beach in conformity with the traffic circulation policies established herein.

TABLE TC-1

TRAFFIC CIRCULATION PRIORITIES

- \* 1. Signalization: Lake Park Blvd. at Federal Point Shopping Center
- 2. Road Repair and Creation of One Way Pairs: Canal Drive and Carolina Beach Avenue North
- \* 3. Road Widening: Lake Park Blvd. (center turn lane)
- \* 4. Signalization: Carl Winner Street and Canal Drive
- \* 5. Road Construction: Carl Winner Street Extension
- 6. Road Repair: Resurface Existing Paved Town-owned Streets (as needed)
- 7. Road Improvement: Pave Existing Unpaved Town-owned Streets
- \* 8. Signalization: Dow Road at Harper Avenue and Ocean Blvd.
- \* 9. Signalization: Lake Park Blvd. at Dow Road
- \*10. Road Construction: Winner Avenue Extension
- \*11. Signalization: Lake Park Blvd. at Winner Avenue
- 12. Parking: Provide Centralized Parking Facility or Facilities
- \*13. Signalization: Lake Park Blvd. at Atlanta Avenue
- \*14. Signalization: Lake Park Blvd. at Ocean Blvd.
- \*15. Signalization: Lake Park Blvd. at Spartanburg Avenue
- \*16. Road Widening: Dow Road (four lanes)
- \*17. Road Widening: St. Joseph's Street (four lanes)

\* Requires coordination with and/or implementation by the NC DOT

## CAPITAL FACILITIES AND COMMUNITY SERVICES

A major determinant of the type, intensity and location of future growth in any town involves the provision of capital facilities, such as water and sewer services, streets and recreational facilities, and community services, such as solid waste collection, police and fire protection, and school systems. Once these services are made available in an area, that area becomes more attractive for development, particularly relative to other areas lacking such services. Most towns - and Carolina Beach is no exception - selectively utilize service and facility provision as a means of guiding development into appropriate locations.

Because the provision of capital facilities and community services are so important to land use planning, this Element establishes general guidelines for the expansion and extension of existing facilities. The capital facilities discussion in this element is therefore intended to provide direction to the future development of a true Capital Improvement Program (CIP) for the Town.

The Capital Facilities and Community Services Element are divided into three main sections. The first section contains an inventory of existing capital facilities and community services. The second section describes the anticipated improvements which will be needed as the Town grows. Policies and implementation procedures for the Town's capital facilities and community services are provided in the third section.

As a generalized precursor to a CIP, the capital facilities discussion in this Element is concerned only with major capital facilities, rather than with an itemization of budgetary needs for particular years. Consequently, discussion of capital facility inventory and needs will be restricted to water and sewer infrastructure, drainage and flood control, and public buildings. Inventory of and needed improvements to two other major capital facilities - streets and recreational facilities - have been previously considered in the Traffic Circulation and Recreation Elements, although there will be limited discussion of these items in this Element as well.

### CAPITAL FACILITIES AND COMMUNITY SERVICES INVENTORY

This section contains a listing and description of the Town's major capital facilities and community services. Maps CF-1 through CF-4 illustrate the location of these facilities.

#### Public Land and Buildings

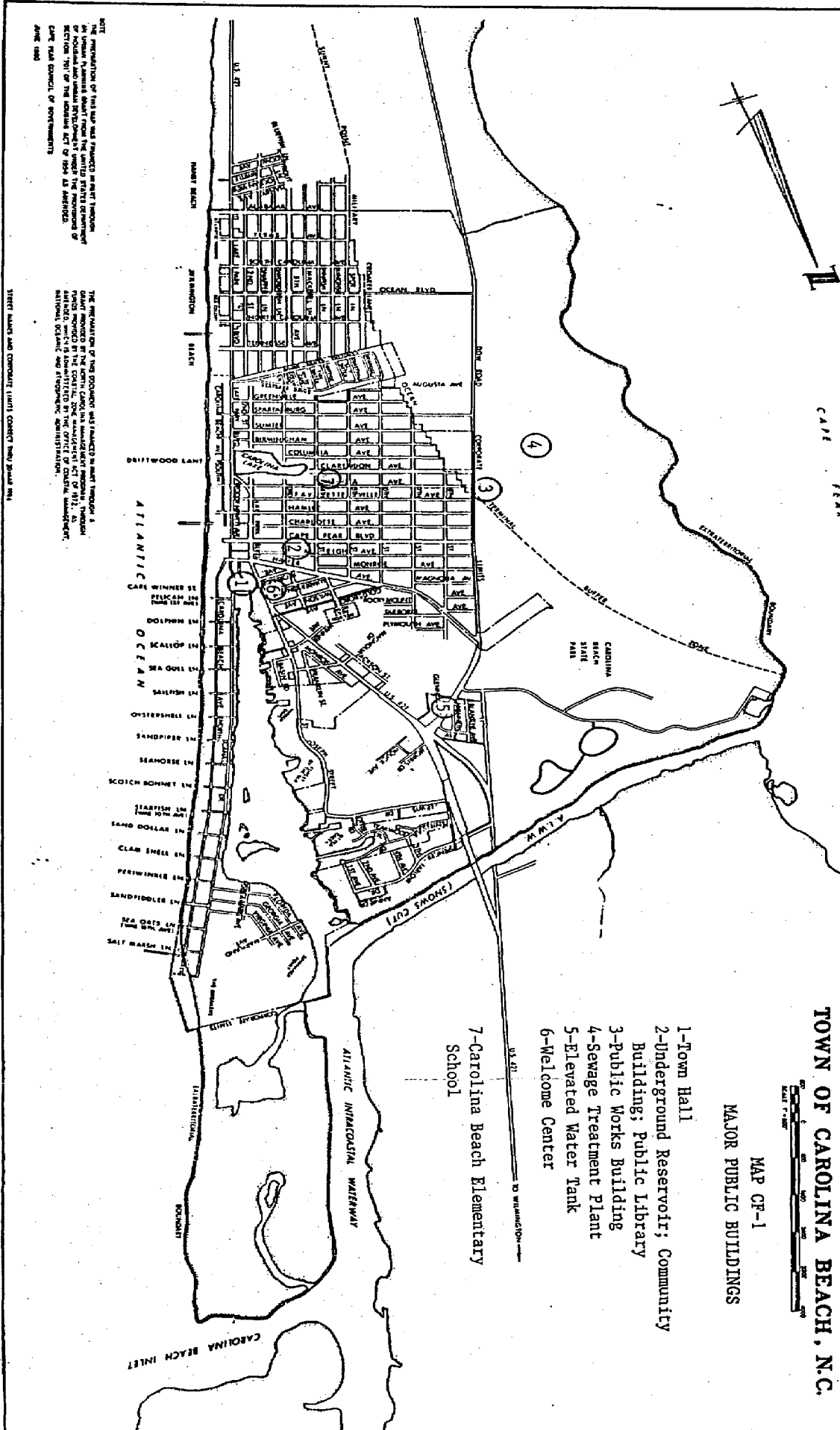
Major public buildings owned by the Town include the Town Hall, Community Building, Library Building, Welcome Center and Public Works Building. A major public building owned by New Hanover County within the Town's corporate limits is the Carolina Beach Elementary School. These buildings, along with the Town's sewage treatment plant and water storage structures, and shown on Map CF-1.

# TOWN OF CAROLINA BEACH, N.C.

MAP CF-1  
MAJOR PUBLIC BUILDINGS

- 1-Town Hall
- 2-Underground Reservoir; Community Building; Public Library
- 3-Public Works Building
- 4-Sewage Treatment Plant
- 5-Elevated Water Tank
- 6-Welcome Center

7-Carolina Beach Elementary School



NOTE: The preparation of this map was financed in part through a grant from the U.S. Department of the Interior, Bureau of Reclamation, under the authority of the Reclamation Act of 1916, as amended, and the National Reclamation Act of 1917, as amended. The map was prepared by the U.S. Army Corps of Engineers, under the authority of the Reclamation Act of 1916, as amended, and the National Reclamation Act of 1917, as amended.

THE PREPARATION OF THIS MAP WAS FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF THE INTERIOR, BUREAU OF RECLAMATION, UNDER THE AUTHORITY OF THE RECLAMATION ACT OF 1916, AS AMENDED, AND THE NATIONAL RECLAMATION ACT OF 1917, AS AMENDED. THE MAP WAS PREPARED BY THE U.S. ARMY CORPS OF ENGINEERS, UNDER THE AUTHORITY OF THE RECLAMATION ACT OF 1916, AS AMENDED, AND THE NATIONAL RECLAMATION ACT OF 1917, AS AMENDED.

STREET NAMES AND CORRELATIONS (UNIT CORRELATION) HAVE BEEN

The Town Hall building contains some 8,550 square feet. Major facilities include: the Town Council meeting room; police and fire station; offices for much of the Town staff (Town Manager, Recreation Director, Building Inspectors, Public Works Director, Fire Chief, Town Clerk and Finance Director, Police Chief and Town Planner); water, sewer and trash collection billing; and an indoor gym with a full size basketball court.

The Community Building (1,000 square feet) serves as a meeting place for a variety of Town groups. Reservations for its use are made with the Recreation Director. The Public Library building (2,700 sq. ft.) is owned by the Town but contains books and other resource materials provided by New Hanover County. The Public Library is staffed by New Hanover County employees as well.

The Welcome Center (1,000 sq. ft.) is headquarters for the Pleasure Island Chamber of Commerce. The Greater Wilmington Chamber of Commerce also maintains an office in the Welcome Center on a seasonal basis. The Public Works Building (4,200 sq. ft.) contains limited office space for employees of the Public Works Department, along with garage space for Town vehicles to be stored or repaired. Carolina Beach Elementary School serves as the Town's only public educational facility. It is owned and operated by the New Hanover County school system.

#### Water and Sewer Infrastructure

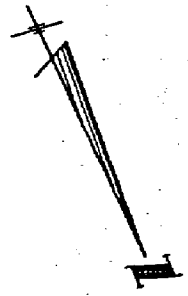
One of the main reasons behind the phenomenal growth which has occurred in Carolina Beach in recent years is the Town's excellent water and sewer infrastructure. The Town operates 1.5 million gallon per day (MGD) wastewater treatment plant completed in 1976 with Federal funding (an EPA "201" Grant). Twenty-eight (28) percent of the capacity of the Town's sewage treatment plant is currently reserved for use by the Town of Kure Beach.

The Town's water production and treatment system is rated at .7 MGD capacity (NC NRCD Standards) but can produce double the rated capacity on demand. Potable water storage includes a 1.0 MGD underground storage reservoir and a recently constructed (April, 1985) 500,000 gallon elevated water tank.

The Town has some 26 miles of sewer lines and some 26 miles of water lines. Maps CF-2 and CF-3 show those areas of the Town currently served by water and sewer services and/or those areas for which water and sewer service is readily available (i.e., suitable for relatively inexpensive service extension at the request of property owners). The Town provides sewer and water service to new development only if such development is incorporated or is under a petition for voluntary annexation. Extension of service to newly annexed areas occurs at developer expense. The Town discourages private wells and septic systems for capital facility financing and environmental reasons.

Water and sewer rates are as follows: (1) Sewer - \$5.00 (fixed) +\$1.34/1000 gallons; (2) Water - \$5.00 (fixed) +\$0.83/1000 gallons. For areas served outside the incorporated limits, the rates are double the above amounts.





CAPE Fear RIVER

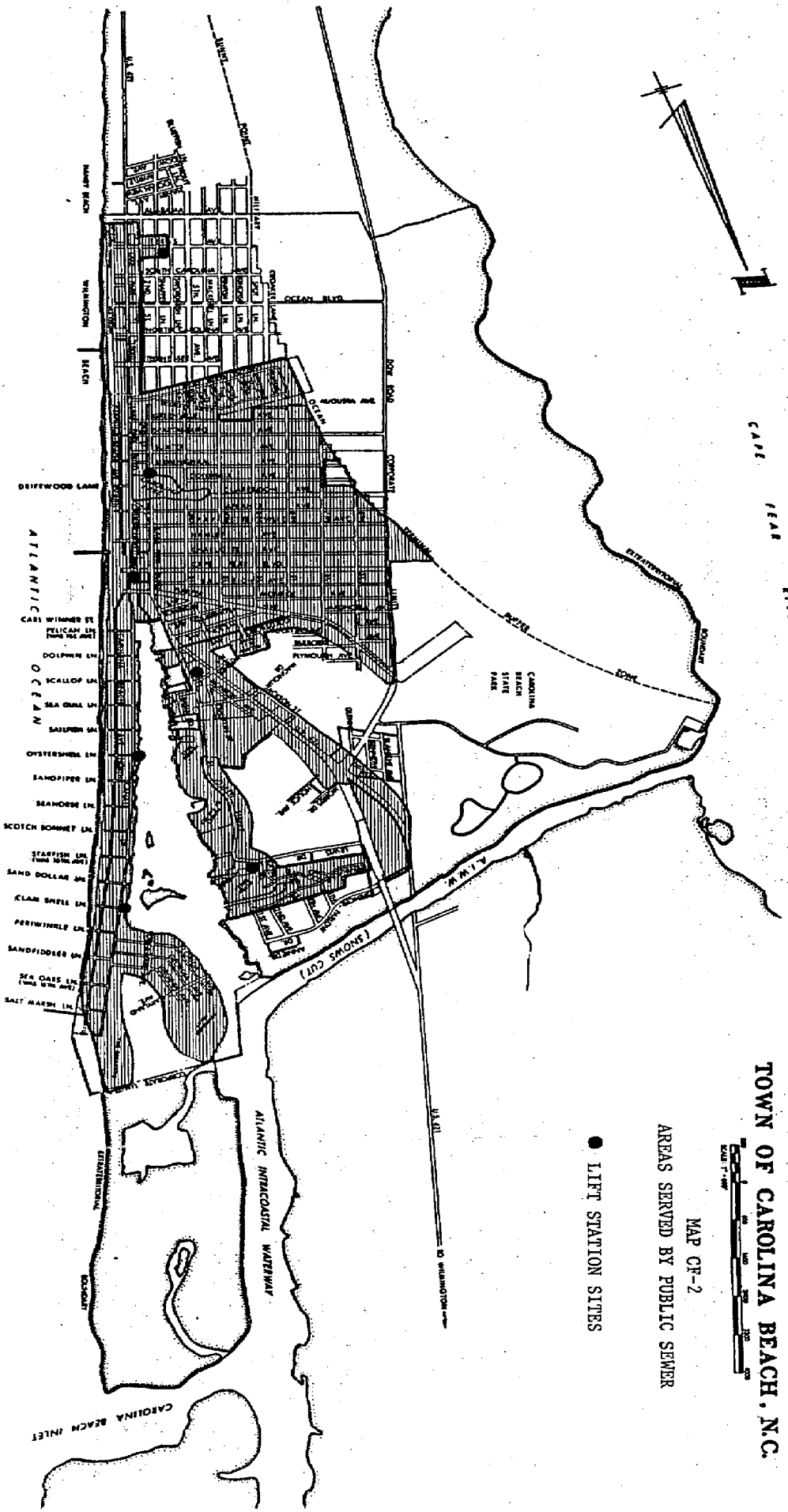


# TOWN OF CAROLINA BEACH, N.C.

MAP CP-2

AREAS SERVED BY PUBLIC SEWER

● LIFT STATION SITES



NOTE: INFORMATION OF THIS MAP WAS OBTAINED IN PART THROUGH A GRANT PROVIDED BY THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION AND PUBLIC UTILITIES UNDER THE PROVISIONS OF SECTION 101 OF THE FEDERAL AID ACT OF 1946 AS AMENDED. CARE MUST BE TAKEN IN THE USE OF THIS MAP.

THE PREPARATION OF THIS DOCUMENT WAS FINANCED IN PART THROUGH A GRANT PROVIDED BY THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION AND PUBLIC UTILITIES UNDER THE PROVISIONS OF SECTION 101 OF THE FEDERAL AID ACT OF 1946 AS AMENDED. CARE MUST BE TAKEN IN THE USE OF THIS MAP.

STREET NAMES AND CONTOUR LINES CORRECT THROUGH 1964.



## Drainage and Flood Control

The Town contains three major drainage basins: (1) Henniker's Ditch; (2) Carolina Beach Lake; and (3) Myrtle Grove Sound. As shown on Map CF-4, the Henniker's Ditch drainage basin involves the western section of Carolina Beach. Carolina Beach Lake serves as the drainage basin for the central and southern portions of the Town. Finally, the Myrtle Grove Sound basin contains the Town's northern sections.

Drainage outfalls for each of these drainage basins are as follows. The Henniker's Ditch basin utilizes the Cape Fear River as its outfall. Carolina Beach Lake outfalls into Myrtle Grove Sound at the Town's public marina through a system of drain pipes. The Myrtle Grove Sound basin outfalls into the Sound at numerous points.

Other than the above-described drainage systems, the Town's main flood control structure is its ocean berm and beach. This structure, a product of an extensive, ongoing beach renourishment project, serves to protect oceanfront properties and other areas of the Town from the effects of overwash during major storm events.

## Community Services

The Town's police protection is provided by an eighteen member paid police force consisting of a police chief, a captain, a lieutenant, four sergeants, a detective, four patrol officers, five dispatchers, and a juvenile officer/administrative assistant. Police patrol vehicles include a newly-acquired four-wheel-drive vehicle for off-road use and nine patrol cars. The New Hanover County Sheriff's Department assumes primary responsibility for police protection in the unincorporated portions of the planning area.

Two volunteer fire departments serve the Town's incorporated area and extraterritorial jurisdiction. The Carolina Beach Volunteer Fire Department consists of thirty-three volunteers; the primary jurisdiction of this fire department is the Town's corporate limits. The Federal Point Volunteer Fire Department consists of approximately thirty volunteers and serves the Town's extraterritorial jurisdiction, along with other areas in the southern part of New Hanover County. The fire insurance rating for the Carolina Beach Volunteer Fire Department is eight, on a descending scale of from one (best) to ten (worst); the Federal Point Volunteer Fire Department's insurance rating is nine. Equipment for each fire department is listed below.

### CAROLINA BEACH VOLUNTEER FIRE DEPARTMENT

- 2 Pumper Trucks
- 1 Elevated Stream  
Pumper Truck\*
- 1 Hose Van
- 1 Utility Van
- \*Schedule for delivery  
in late 1986

### FEDERAL POINT VOLUNTEER FIRE DEPARTMENT

- 2 Pumper Trucks
- 2 Brush Trucks
- 1 Tanker Truck

Solid waste collection and disposal within the Town is provided under contract with a private collection company. Weekly collection service is provided to the Town's residential areas, with the commercial areas being served more frequently.

Public education for the school-age residents of Carolina Beach is provided by New Hanover County. The Town contains one elementary school (Carolina Beach Elementary School). Junior high school and high school students attend schools outside the Town's jurisdiction.

#### CAPITAL FACILITY AND COMMUNITY SERVICES NEEDS

The rapid growth experienced by the Town of Carolina Beach since 1980 has invalidated many of the projections for facilities needs put forward in the 1980 Land Use Plan update. Consequently, the need for planning to accommodate additional growth in the Town has become even more acute. This section of the Capital Facilities and Community Services Element is therefore concerned with establishing general projections for facility and service improvements.

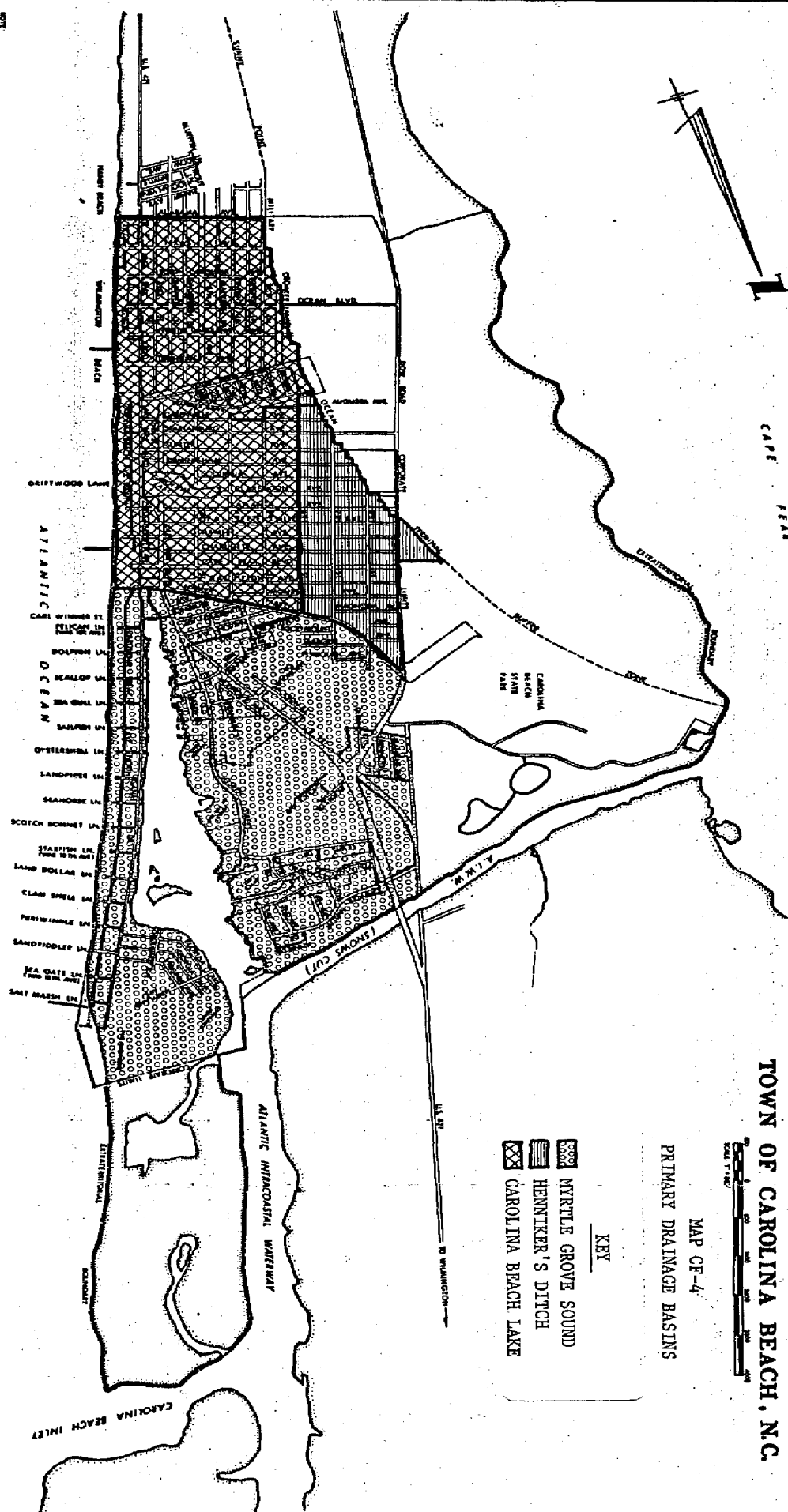
#### Determinants of and Funding for Capital Facilities and Community Services Improvement Needs

For Carolina Beach, the two primary determinants of future improvements to facilities and services involve: (1) Growth in currently incorporated areas; and (2) Growth in areas to be annexed. Funding for these improvements will come from a variety of sources: Tax revenues, impact and user fees, assessment of affected property owners, installation of public facilities by private developers, and outside agency grants and funding. This section will therefore consider the major determinants of facility and service needs and the appropriate sources of funding for each sub-category of these determinants.

# TOWN OF CAROLINA BEACH, N.C.

MAP CE-4  
PRIMARY DRAINAGE BASINS

- KEY
- MYRTLE GROVE SOUND
  - HENNIKER'S DITCH
  - CAROLINA BEACH LAKE



NOTES: The purpose of this map is to provide a general indication of the location of the various drainage basins within the Town of Carolina Beach. It is not intended to be used as a legal document. The Town of Carolina Beach is not responsible for any errors or omissions on this map.

THE TOWN OF CAROLINA BEACH, N.C. is a member of the North Carolina Beaches Association. The Association is a non-profit organization that promotes the development and preservation of the beaches of North Carolina. The Association is committed to providing a safe and enjoyable beach experience for all visitors.

STREET NAMES AND CORRELATE LIGHT CORRECT THROUGH 2000.

Currently Incorporated Areas. Growth in the currently incorporated areas will place increased pressure on capital facilities and community services already serving these areas. As a consequence, infrastructure which is dilapidated or designed to serve lower levels of development will need to be replaced or improved. Primary sources of funding for these improvements include tax revenues, impact and user fees, and assessments. Private developers will only be willing to provide public facilities in these areas when the timing or extent of planned or programmed public improvements do not conform to their development plans.

Outside agency grants and other funding sources may possibly be available, particularly considering the regional nature of the Carolina Beach economy; however, grant agencies are becoming increasingly limited in their ability to fund such improvements and competition for these funds is extremely competitive. The Town should therefore not plan on receiving much assistance beyond traditional State-collected local revenues, such as gas, sales, liquor, and accommodations tax revenues.

Areas Annexed by Petition. Those areas annexed by the Town after voluntary petition by the property-owner generally involve extension of major capital facilities by private developers, particularly when relatively large areas of land are involved. Consequently, for these areas, the Town's primary concern lies in the impact such developments will have on the overall system (such as roadway capacity, sewer and water plant capacity, etc.). Other means of funding these system improvements include increased tax revenues and user and impact fees.

Forced Annexed Areas. Areas annexed through independent action by the Town must receive equivalent levels of public services as those provided to incorporated areas within a reasonable time period after annexation. As a consequence, the Town's major service concerns for these areas involve all aspects of service provision. Carefully prepared annexation feasibility studies for all forced annexations, as required by State statutes, will illustrate the costs and benefits of any forced annexation move by the Town. Major sources of funding for capital facility and community services improvements include increased tax revenues, user and impact fees (for growth which occurs after annexation) and assessments.

#### Capital Facility and Community Services Needs

This section of the Capital Facilities and Community Services Element outlines needed capital facility and community services improvements given anticipated growth in the incorporated areas and areas yet to be annexed. (See Appendix 2, p. 119)

Public Land and Buildings. The population projections provided in Appendix 2 (p. 119) indicate that the population of Carolina Beach can be expected to approximately double within the planning horizon of this Land Use Plan update. Additions to public land holdings for recreational purposes, as outlined in the Recreation Element, will constitute the bulk of needed public land acquisition through this period. However, right-of-way and easement acquisition for new roadways and drainage improvements will also significantly add to the total amount of new public lands to be acquired. A new Town Hall site will also be needed.

If the Town staff is to continue to provide existing levels of service to the citizens of and visitors to Carolina Beach as the Town continues its rapid growth, it will be necessary to add a substantial number of new Town employees over the next ten years. These additions will require the construction of a new Town Hall building because the existing facility is at capacity with current staff. The new building should be constructed on land which is not floodprone (to aid in emergency operations during major storm events) and designed to accommodate police and fire stations, along with administrative offices and meeting rooms.

Sewer Service. Sewage treatment plant capacity must be increased over the next ten years to accommodate expected growth. Currently, two plant expansions are programmed: The first expansion is for an additional .35 MGD, while the second expansion will be for .75 MGD. Should Kure Beach continue its present rate of participation in the Carolina Beach sewage treatment system (28%), the programmed plant expansions will amount to an additional .79 MGD available for use by the Town of Carolina Beach.

Given the expected range of new dwelling unit construction for the Town over the next ten years (see Appendix 2), there will be a need for additional plant expansion of between .6 MGD and 1.56 MGD. These figures assume that the average number of bedrooms in each of the new dwelling units will be 2.25 and that Kure Beach will continue its participation at current levels. See Table CF-1 for further information.

TABLE CF-1  
SEWAGE TREATMENT IMPROVEMENT NEEDS

<u>NEW UNITS</u>	<u># BEDROOMS PER UNIT</u>	<u>GALLONS/DAY PER BEDROOM*</u>	<u>TOTAL SEWAGE GENERATED (MGD)</u>	<u>+ KURE BEACH</u>
3,000	2.25	150	1.01	1.4
4,000	2.25	150	1.35	1.88
5,000	2.25	150	1.69	2.35

\* NC NRCD standards

Additional improvements to the Town's sewer service involve line extensions to areas needing service improvements and continuation of the existing maintenance program to reduce the infiltration and inflow of groundwater and stormwater into sewer lines.

Water Service. Water service improvements will include additional wells and treatment system improvements to accommodate growth, the construction of a subaqueous water line crossing of Myrtle Grove Sound and construction of a 500,000 gallon elevated water tank on the southern side of Town to improve water flow to critical growth areas, and extension of water lines into areas requiring new or improved service.

Table CF-2 provides estimated additional water production and treatment demands for the anticipated growth of the next ten years.

TABLE CF-2  
WATER TREATMENT IMPROVEMENT NEEDS

<u>EXPECTED NEW UNITS</u>	<u># BEDROOMS PER UNIT</u>	<u>GALLONS/DAY PER BEDROOM*</u>	<u>TOTAL WATER NEEDS (MGD)</u>
3,000	2.25	150	1.01
4,000	2.25	150	1.35
5,000	2.25	150	1.69

\* NC NRCD standards

Drainage and Flood Control. The primary drainage problem in the Town of Carolina Beach involves flooding of the Carolina Beach Lake drainage basin during major storm events. This flooding is due to the inability of the current drainage system to provide a rapid outfall of waters which collect in Carolina Beach Lake. Construction of drainage improvements to this system to reduce the extent of flooding during major storm events is the Town's most significant drainage concern.

The overall drainage system in Carolina Beach is in need of both improvement and a regular maintenance program to keep ditches and piping working at peak efficiency. The beach renourishment program which reduces flooding due to overwash during major storm events should also receive continued strong support from the Town.



Community Services. Improvement to the Town's existing police protection involves scheduled replacement of older patrol vehicles and additions to personnel based upon growth in the service area population (through annexation and through residential and visitor population increases in the currently-incorporated areas). As more parcels of land within the planning area are annexed by the Town, the role of the New Hanover County Sheriff's Department will diminish in importance.

Improving the Town's fire protection will required continual recruitment of dedicated and trained volunteers, as well as additions to firefighting equipment. As more portions of the planning area are annexed, however, the role of the Federal Point Volunteer Fire Department will diminish with regard to protection of private property; the Federal Point Department will likely retain its important function of fighting brush fires on public lands in the planning area (e.g., Carolina Beach State Park and Sunny Point Military Ocean Terminal Buffer Zone). The firefighting burden can also be eased by the Town's continued efforts to convince the N.C. Building Code Council to adopt code changes requiring sprinklers in wood-frame multifamily construction. The Town is also considering adopting changes to its zoning regulations which will require larger setbacks for new multifamily development which is not equipped with sprinkler systems.

Service improvements to the Town's existing solid waste collection and disposal program will primarily involve monitoring the performance of these private contractor(s) authorized by the Town to handle its solid waste. Such monitoring should be designed to anticipate or to measure changes in the public's solid waste service needs. The Town should also request improvements to the New Hanover County solid waste collection system in order to alleviate some existing problems with illegal dumping of residential solid waste by residents of the unincorporated portions of the planning area.

Improving the public education of the Town's school-age residents will involve adding or expanding facilities at the Carolina Beach Elementary School in order to alleviate the overcrowding which currently exists at the school (436 students are enrolled in a school with a 400 student capacity). Some sharing of the County's cost of these expanded facilities by the Town can perhaps occur, given multiple use possibilities of a school gymnasium and/or other recreational and assembly facilities. Middle school students will likely benefit from the proposed construction of a new middle school in the southern part of New Hanover County.

#### Policies and Implementation Procedures

In order that the future provision of capital facilities and community services described above can be achieved, the following policies and implementation procedures are established by and for the Town of Carolina Beach. Policies are official guidelines set down for present and future decision-making: they are broad in scope to allow the degree of flexibility necessary to

adequately accommodate changing conditions in a rapidly-growing resort area like Carolina Beach. Implementation procedures are directives to the Town Manager and staff as to how the policies are to be administratively enacted; they are necessarily specific to the issues in question.

### Policies

- (1) PROVIDE A FULL RANGE OF MUNICIPAL SERVICES TO ALL INCORPORATED AREAS.

The Town of Carolina Beach is committed to providing all of its citizens with a full range of municipal services.

- (2) PROVIDE FOR COST-EFFECTIVE ANNEXATIONS.

The Town must carefully consider the costs to be incurred and the benefits to be derived in any voluntary or forced annexations.

- (3) PROVIDE FOR TIMELY AND COST-EFFECTIVE PROVISION OF CAPITAL FACILITIES AND COMMUNITY SERVICES THROUGH PLANNING AND PROGRAMMING ON THE BASIS OF ANTICIPATED GROWTH.

The Town of Carolina Beach shall utilize the Future Land Use Element (pp. 64-86), along with all appropriate growth trends and projections, as a development guide in planning for needed capital facilities and community services.

- (4) CONTINUE TO EVALUATE CAPITAL FACILITY AND COMMUNITY SERVICE NEEDS AND GROWTH TRENDS.

The Town of Carolina Beach recognizes that capital facilities and community services planning is an ongoing process, subject to constant refinement, revision and scrutiny, in order that the citizens of and visitors to the Town can receive the optimal level of public service.

- (5) PROVIDE FOR A MAINTENANCE PROGRAM FOR CAPITAL FACILITIES.

Capital facilities represent a substantial investment for the Town. A regular maintenance program will protect this investment.

- (6) PROVIDE FOR COORDINATION BETWEEN THE TOWN AND OTHER GOVERNMENTAL AGENCIES IN THE PROVISION OF NEEDED CAPITAL FACILITY AND COMMUNITY SERVICE IMPROVEMENTS.

The Town of Carolina Beach recognizes the need for coordination between the Town and other governmental agencies in providing certain shared capital facilities and community services improvements, such as streets, schools, recreational facilities, and shared public buildings.

### Implementation Procedures

- (1) Prepare an annually-updated capital improvements program for budgetary and planning purposes.

The Town Manager and staff are directed to prepare an annually-updated Capital Improvement Program to aid the Council, Manager and staff in planning and budgeting for future capital facility needs.

- (2) Maintain a continued close watch on the rapid growth experienced by the Town as such growth affects capital facility and community service needs.

The Town Manager and staff are directed to be alert to the likelihood of changes in the current rate of growth which might alter the type and rate of capital facility and community service improvements required of the Town.

- (3) Utilize the Future Land Use Element in particular and the remaining land use plan elements and appendices in general as guidelines for the type, extent, and rate of development for which the Town will need to plan and budget.

The Future Land Use Element and other sections of the Land Use Plan provide invaluable information for planning and budgeting for needed improvements to the Town's capital facilities and community services. The Town Manager and staff are directed to utilize this information in making administrative decisions and in preparing reports to the Council.

- (4) Coordinate needed capital facility and community service improvements with other affected governmental agencies in order to improve the provision and cost-effectiveness of such improvements.

The Town Manager and staff are directed to coordinate with other governmental agencies whenever shared improvements are indicated and/or proposed. Such coordination shall be intended to improve service to the public and cost-effectiveness of project design, construction, service, and maintenance.

- (5) Establish a maintenance program for capital facilities.

The Town Manager and staff are directed to protect the Town's capital investment through planning and budgeting for, and performing, needed facility maintenance.

- (6) Continue to discourage individual septic and community "package" treatment facilities when extension of Town sewer and water services is economically feasible.

The Town Manager and staff are directed to continue to discourage non-public waste treatment facilities when such facilities can be economically replaced by public waste treatment services.

- (7) Prepare for consideration additional ordinances, budget documents, and resolutions, as needed, to provide for effective provision of needed capital facilities and community services.

The Town Manager and staff are directed to prepare for consideration additional ordinances, budgets and resolutions in order to achieve effective planning and provision with regard to needed capital facilities and community services.

## DISASTER PREPAREDNESS

All coastal communities must be cognizant of the potential for natural disaster inherent to their geographic location in the form of hurricanes and tropical storms. Disaster preparedness planning in the Town of Carolina Beach is compounded by two other primary sources for disaster events, both of which are man-made: (1) Damage to and possible meltdown of the Carolina Power and Light (CP&L) Brunswick County nuclear power plant; and (2) Munitions explosion at the Sunny Point Military Ocean Terminal. Both these facilities are located on the western shore of the Cape Fear River opposite Carolina Beach.

This Element of the Carolina Beach Land Use Plan update is therefore concerned with outlining those actions to be taken by the Town in the event of a man-made or natural disaster which serve to minimize damage and serve to provide for the greatest possible level of public safety. Because these actions can be considered to fall into four major categories - mitigation, preparedness, response and recovery (Before the Storm: Managing Development to Reduce Hurricane Risks; McElyea, Brower, Godschalk; 1982; p. 3-1.) - a discussion of the separate categories is provided below.

### MITIGATION

"Mitigation" involves those activities taken to minimize risk and damage in the event of a disaster. Mitigation actions generally cannot be taken directly by the Town of Carolina Beach with regard to the man-made disasters mentioned above. The Town must rely on direct actions taken by outside agencies (for instance, CP&L and the U.S. Army) to mitigate those disasters. These outside agency mitigation actions are outlined below.

The U.S. Army has purchased and maintains a "buffer zone" devoid of occupied structures on the west side of Pleasure Island. This area constitutes approximately one third of the land contained in the Carolina Beach municipal limits and extraterritorial jurisdiction and serves as a natural blast shield for an explosion at the Sunny Point Military Ocean Terminal. The Army has also installed warning sirens along the perimeter of the buffer zone in order to provide an early warning signal. The Town can assist the Army in its attempts to mitigate damage in the event of an explosion by supporting the Army's policies restricting access to areas within the buffer zone.

CP&L's Brunswick County nuclear power plant is subject to Federal regulation by the NRC (Nuclear Regulatory Commission). These regulatory activities are mitigation attempts in that they are intended to isolate problems

which pose potential for disaster prior to those problems actually reaching disaster conditions. CP&L also sponsors periodic disaster simulation drills to alert local public safety agencies of the correct responses to various disaster situations at the nuclear power plant. The Town can assist CP&L in its mitigation attempts by insuring that its public safety officials are fully informed of emergency measures to be taken and by requiring their participation in these drills.





Regarding natural disasters which occur through major storm events such as hurricanes, tropical storms and northeasters, current planning dogma leans heavily toward the mitigation method involving the discouragement of construction and development in floodprone areas. Map DP-1 (p. 58) illustrates why this mitigation technique, so seductive in its logical simplicity, cannot be brought to bear on the natural disaster situation at Carolina Beach. As the map indicates, most areas of the Town are floodprone. The remaining areas are typically not attractively situated for relatively dense development. (See Table DP-1, p. 59)

Consequently, Carolina Beach resorts to other, less simple mitigation techniques. The provisions of the N.C. State Building Code which relate to floodprone and coastal area construction are vigorously enforced by the Town's Building Inspection Department. As has been discussed in other Elements of this Land Use Plan Update, the Town is committed to supporting continued renourishment of its public beachfront, along with continuing its established program of dune grass planting and maintenance to bolster its first line of defense against a storm's fury, the primary dune system. A transfer of development rights program is established in the Future Land Use Element to encourage dedication to the public of oceanfront and soundfront lands. Finally, the Town has successfully fought to retain a more stringent local FIRM map in order to accurately describe the hazards of the coast to its residents and property-owners through insurance rates and restrictions. These actions are the most significant mitigation weapons in the Town's disaster preparedness arsenal.

#### PREPAREDNESS AND RESPONSE

Preparedness and response are the next two actions taken by the Town in a disaster situation. "Preparedness" refers to the actions taken in preparing for a possible disaster. "Response" includes those actions taken during a disaster event. These two categories of disaster planning are considered together in this section because of their similarities.

FLOOD-PRONE AREAS:  
1975 FIRM MAP

	V-ZONE		A-ZONE
	B-ZONE		C-ZONE

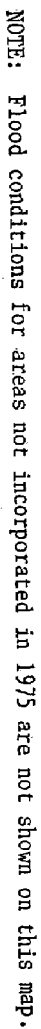


TABLE DP-1  
DEVELOPMENT IN FLOODPRONE AREAS\*  
By Development Type

FLOOD ZONE	RESIDENTIAL		HOTEL/MOTEL		COMMERCIAL % OF TOTAL
	# OF UNITS	% OF TOTAL	# OF UNITS	% OF TOTAL	
V	667	26%	224	40%	5%
A	1,755	69%	338	60%	85%
TOTAL	2,422	95%	562	100%	90%

V-Zone areas are defined as areas of 100-year coastal flood with velocity (wave action) potential.

A-Zone areas are defined as areas of 100-year flood.

B-Zone and C-Zone areas are regarded as being outside the 100-year flood area and are regarded as areas of moderate and minimal flood hazard, respectively. Development in these areas is not calculated in Table DP-1.

\*The current FIRM map from which this data was generated includes only those areas of the Town incorporated on or before 1975. Other development in more recently incorporated areas or currently within the Town's extraterritorial jurisdiction will likely exhibit a similar strong floodprone tendency.



For man-made disasters, the Town will coordinate its preparedness and response activities with the relevant outside agencies, relying on those agencies for pertinent instructions and information. For natural disasters, the Town's Evacuation Preparedness Plan is provided in Appendix 10. Prepared through discussions with the Town staff and through coordination with other local governments, this document outlines the actions the Town will take with regard to preparedness and response to natural disaster conditions and may be adapted for use in the event of a man-made disaster.

## RECONSTRUCTION

"Reconstruction" involves the actions taken by the Town to rebuild after a disaster occurs. For man-made disasters, the Town will rely on coordinative efforts with relevant outside agencies to determine the extent and timing of its reconstruction activities in order to assure the appropriate level of public safety. For natural disasters, the following actions shall be taken when the storm event is judged to be of 100 year frequency or less. (When the storm event is judged to be greater than 100 year frequency, the actions established under (1) below shall be taken, since such a storm event exceeds reasonable design standards and is clearly an uncommon event which could not be reasonably anticipated.)

In all types of natural and manmade disasters, a temporary moratorium on reconstruction activities shall be imposed until assessment of damage levels by public officials and by the Damage Assessment Team (a volunteer group of local realtors which assists local officials in determining the extent of damages) occurs, and the determination is made that public safety will not be endangered by reconstruction activities. When public facilities are catastrophically damaged by a 100 year or lesser storm, the Town shall seriously consider the relocation of these facilities to areas of lesser damage potential.

- (1) In the event of minor structural damage (<10% of all oceanfront (V-zone) buildings receiving structural damage amounting to 50% or more of appraised value), building permits for repairs shall be required for only those buildings in need of structural repairs. Permit fees for damage repairs shall be waived for a period of ninety (90) days after the storm event. Nonconforming structures damaged to 50% or more of appraised value may be rebuilt without being brought into zoning code compliance in accordance with Article 900 of the Town Zoning Ordinance.

- (2) In the event of major structural damage (10% - 49% of all oceanfront (V-zone) buildings receiving structural damage amounting to 50% or more of appraised value), building permits for repairs shall be required for only those buildings in need of structural repairs. Permit fees for damage repairs shall be waived for a period of one hundred eighty (180) days after the storm event. Nonconforming structures damaged to 50% or more of appraised value shall be rebuilt only when brought into compliance with the Town's zoning, building and other codes, regardless of the provisions of Article 900 of the Town's Zoning Ordinance.
- (3) In the event of catastrophic structural damage (50% or more of all oceanfront (V-zone) buildings receiving structural damage amounting to 50% or more of appraised value), building permits for repairs shall be required only for those buildings in need of structural repairs. Permit fees for damage repairs shall be waived for a period of one hundred eight (180) days after the storm event. Structures damaged to 50% or more of appraised value shall be rebuilt only when brought into compliance with the Town's zoning, building, and other codes, regardless of the provisions of Article 900 of the Town's Zoning Ordinance, except as follows: Oceanfront and/or soundfront buildings damaged to 50% or more of appraised value shall be rebuilt only when brought into compliance with the Town's zoning, building, and other codes and only when rebuilt at 50% of the density allowed at the time of the catastrophic storm event, regardless of the provisions of Article 900 of the Town's Zoning Ordinance.

The reconstruction activities outlined above illustrate the Town's belief that the requirements of the N.C. State Building Code, the State CAMA regulations, and the Town's beach renourishment program are satisfactory methods of protecting oceanfront and other structures from storm events that can reasonably be anticipated (i.e., 100 year). Should this belief prove to be unfounded through major or catastrophic structural damages, the Town is willing to take action to reduce (mitigate) the damage from future major and catastrophic storm events (as defined above) by reducing density and public facility provision in the areas most susceptible to damage.

## POLICIES AND IMPLEMENTATION PROCEDURES

In order that the disaster mitigation, preparedness, response and reconstruction activities described above can be achieved, the following policies and implementation procedures are established by and for the Town of Carolina Beach. Policies are official guidelines set down for present and future decision-making: they are broad in scope to allow the degree of flexibility necessary to adequately accommodate changing conditions in a rapidly-growing resort area like Carolina Beach. Implementation procedures are directives to the Town Manager and staff as to how the policies are to be administratively enacted; they are necessarily specific to the issues in question.

### Policies

- (1) UTILIZE APPROPRIATE TYPES AND LEVELS OF INTERGOVERNMENTAL COORDINATION AND COOPERATION IN MITIGATION, PREPAREDNESS, RESPONSE AND RECONSTRUCTION ACTIVITIES.

This policy recognizes that the Town must rely on significant levels of intergovernmental and/or interagency coordination in order to provide the maximum possible level of protection of the public health, safety, and welfare in the event of a disaster situation.

- (2) UTILIZE EXISTING MITIGATION TECHNIQUES AND PREPAREDNESS AND RESPONSE PLANS SO AS TO PROVIDE FOR THE MAXIMUM POSSIBLE PROTECTION OF THE PUBLIC HEALTH, SAFETY AND WELFARE.

The policy recognizes the Town's existing efforts in mitigating, preparing and responding to disaster situations as the appropriate course(s) of action to insure the protection of the public.

- (3) UTILIZE THE RECONSTRUCTION PROCEDURES DESCRIBED IN THIS ELEMENT IN ALL REBUILDING EFFORTS AFTER NATURAL DISASTERS (STORM EVENTS).

The policy establishes the reconstruction procedures described (above) in this Element as the Town's accepted course of action following a natural disaster. (See Appendix 10, p.175) (Reconstruction after man-made disasters will have to occur according to schedules and plans derived from coordinative efforts with outside governments or agencies.)

- (4) CONTINUE TO EVALUATE ALL DISASTER PREPAREDNESS PLANS(S) AND PROGRAMS IN AN EFFORT TO PROVIDE THE MAXIMUM POSSIBLE PROTECTION OF PUBLIC HEALTH, SAFETY AND WELFARE IN DISASTER EVENTS.

The Town of Carolina Beach recognizes that disaster planning is an ongoing process, subject to constant refinement, revision and scrutiny, in order that the public health, safety and welfare can be maximally protected.

#### Implementation Procedures

- (1) Initiate and maintain coordinative efforts with other agencies to insure that disaster planning is a symbiotic and complementary process.

The Town Manager and staff are directed to induce all necessary coordinative efforts with relevant agencies in disaster event preparation. Communication networks shall be established with all relevant agencies to insure that proper coordination takes place.

- (2) Maintain a close watch on the impact continued growth has on existing transportation facilities with regard to evacuation routes and times.

The Town Manager and staff are directed to annually examine the impact of growth on evacuation routes and times in order to insure that the existing transportation systems and any anticipated improvements can adequately handle emergency evacuation traffic.

- (3) Utilize the plans and policies established in this Element and Appendix 10 as directives in the event of disaster situations.

The mitigation, preparation, response, and reconstruction plans, techniques and methods established in earlier sections of this Element shall serve as guidelines for the Town Manager and staff in disaster planning and action.

- (4) Prepare for consideration additional ordinances and resolutions, as needed, to provide for effective disaster planning and action.

The Town Manager and staff are directed to prepare for consideration additional ordinances, as needed, to achieve effective planning and responses with regard to disaster events.

## FUTURE LAND USE

In a rapidly growing community like Carolina Beach, it is extremely important to maintain positive control over both the type and pattern of new development. Rapid, unplanned growth may result in poor traffic circulation patterns, untimely and costly demands for capital facility construction, overuse or loss of important natural resources, and failure to provide adequate recreational facilities. These problems can cause inconvenience to residents and visitors, decrease tourism, slow real estate investment, and place unnecessarily heavy tax burdens on property-owners.

In order for Carolina Beach to achieve its full potential as a coastal resort community, future land use decisions must be carefully considered and properly planned. A wide variety of economic, environmental, and cultural factors must be examined and integrated in a comprehensive and consistent manner. This Future Land Use Element is therefore intended to serve as the link between the other, more disparate elements of the 1985 Land Use Plan update. By providing for a joining of the Land Use Plan elements in a development concept for Carolina Beach, it is insured that the policies and implementation procedures established in those elements are carried out in the future development of the Town.

Existing land use is inventoried in the first section of the Future Land Use Element; important development trends are also charted. The second section outlines the pattern of future development established by and for the Town. The development concepts necessary to accomplish this growth pattern are also considered in that section.

### EXISTING LAND USE AND DEVELOPMENT TRENDS

Two very important determinants of future land use in any town involve existing factors: existing land use and existing development trends. These factors influence future development in much the same way as a person's physique determines how his or her clothes fit; that is, the existing situation provides a particular framework upon which future development patterns must be attached.

Whether the existing situation is regarded as a positive or as a negative influence on future growth depends on the extent of change desired. Once existing land uses or trends are established, it takes considerable time and effort to alter them. This explains why most land use plans and zoning maps seem to rely so heavily on what has existed previously.

Existing land use and existing development trends for the Town of Carolina Beach are discussed below.

### Existing Land Use

This section of the 1985 Land Use Plan provides an inventory of existing land uses within the Town of Carolina Beach and its extraterritorial jurisdiction. Because it is the Town's intention to annex all unincorporated areas within its extraterritorial jurisdiction during the planning horizon of this 1985 Land Use Plan, no effort is made to separate land uses by corporate status. Map FLU-1 illustrates the location of eight generalized land use categories within the Town's planning area. Table FLU-1 indicates the amount of land area devoted to each of sixteen land use categories, along with the intensity (density) of the residential land uses within the planning area.

The generalized land use categories provided in Map FLU-1 are derived from a "windshield survey" of the Town by members of the Town's Inspections and Planning Departments during July and August, 1985. This survey produced site-specific map(s) from which Map FLU-1 was generated. Each of the eight land use categories indicated on Map FLU-1 represent the predominant use of land in that location; that is, there may be a wide variety of land uses in any particular area covered by a single land use category, but the indicated land use category illustrates the most prevalent land use in the area.

Table FLU-1 provides more specific information about land uses within the Town's planning area than does Map FLU-1. Actual acreages of sixteen land use categories have been calculated from the windshield survey map(s) and from information extracted from earlier (1976 and 1980) Land Use Plans.

While it is not possible to directly compare the existing land use data from Table FLU-1 with the existing land use information contained in the two previous Land Use Plans due to changes in the size of the planning area (Carolina Beach ceded extraterritorial jurisdiction over Hanby Beach to Kure Beach since the 1980 Land Use Plan) and uncertainties in the way land use acreages were calculated in the previous plans, two important trends can be traced. First, there has been a dramatic growth in the amount of land devoted to commercial uses since 1980. At that time, it was determined that there were 14.92 acres of land devoted to commercial uses, along with 17.92 acres devoted to cultural, entertainment and recreation (which seemingly includes Amusement District land uses, along with hotel/motel uses). When these acreage figures are compared with the Commercial (82) and Hotel/Motel (17) acreages provided in Table FLU-1, it is obvious that the Town has experienced an expansion in commercial land uses amounting to a three hundred percent (300%) increase in just a five year period. The development of major retail facilities, such as the Federal Point and Pleasure island Plaza shopping centers, has contributed significantly to this rapid increase.



TABLE FLU-1  
EXISTING LAND USE

LAND USE CATEGORY	ACREAGE	# OF UNITS	DENSITY (Units/Acre)	% OF DEVEL. AREA	% OF UNDEVEL./ RECREATIONAL AREA	% OF TOTAL AREA
I. DEVELOPABLE <sup>1</sup>						
A. Residential						
1. Single Family	271	1099	4.1	16.4	N/A	8.1
2. Mobile Home	47	289	6.1	2.8	N/A	1.4
3. Duplex	24	330	13.8	1.5	N/A	0.7
4. Multifamily	93	2056	22.1	5.6	N/A	2.8
5. Total Residential	435	3774	8.7	26.4	N/A	13.1
B. Hotel/Motel	17	674	39.6	1.0	N/A	0.5
C. Commercial	82	N/A	N/A	5.0	N/A	2.5
D. Institutional <sup>2</sup>	28	N/A	N/A	1.7	N/A	0.8
E. Streets/ROW's <sup>3</sup>	442	N/A	N/A	26.8	N/A	13.3
F. Vacant	646	N/A	N/A	39.1	N/A	19.4
G. Total Developable	1650	N/A	N/A	100.0	N/A	49.5
II. UNDEVELOPABLE/RECREATIONAL <sup>4</sup>						
A. Carolina Beach State Park	337	N/A	N/A	N/A	20.0	10.1
B. Snow's Cut Spoil Easement <sup>5</sup>	22	N/A	N/A	N/A	1.3	0.7
C. Wetlands	280	N/A	N/A	N/A	16.6	8.4
D. Water Bodies	202	N/A	N/A	N/A	12.0	6.1
E. Sunny Point Buffer Zone	732	N/A	N/A	N/A	43.5	22.0
F. Beaches	109	N/A	N/A	N/A	6.5	3.3
G. Total Undevelopable/Recreational	1682	N/A	N/A	N/A	100.0	50.5



TABLE FLU-1  
EXISTING LAND USE (Continued)

FOOTNOTES/SOURCES

- (1) Windshield Survey; July/August, 1985
- (2) Excludes Areas within Buffer Zone
- (3) 1980 Land Use Plan (corrected)
- (4) 1976 Land Use Plan (corrected)
- (5) Outside State Park only

The second major change in land use patterns since 1980 has been growth in the Town's residential sector. Between 1970 and 1980, there were 321 new residential units constructed in Carolina Beach. Between 1980 and 1985, as illustrated in Table FLU-2, there were building permits issued for 2,251 residential units. While not all of these permitted units have been constructed, and while, in some cases, older residential structures were relocated or demolished to make room for new residential buildings, it is obvious that a major increase has occurred in Carolina Beach in residential land use.

In 1980, there was a total of 2,237 residential units in Carolina Beach and its extraterritorial jurisdiction (1980 Land Use Plan figures). Since 1980, building permits have been issued for more than that number of existing units. The Town currently contains some 3,774 residential units. In 1980, single family residential units constituted the bulk of residential structures (1980 Census information). Since that time, multifamily structures have become the predominant residential land use, constituting fifty-four percent (54%) of all residential units as compared with twenty-nine (29%) for single family uses, nine percent (9%) for duplexes, and eight percent (8%) for mobile home uses.

Existing residential density figures in Table FLU-1 contain two surprising bits of information. The single family residential density (4.1 units/acre) is quite low considering the preponderance of building lots of approximately 5,000-6,000 square feet in size (i.e., the RA-5 and RA-6 zoning classifications). This low density is primarily due to the existence of some very large lots, relatively speaking, in the RA-12 Zoning District. Many of these home sites substantially exceed the minimum lot size of 12,000 square feet established for that zoning classification.

Another surprise is the relatively low multifamily density (22.1 units/acre) for a resort area like Carolina Beach. This figure is misleading because several major multifamily projects (Spinnaker Pointe, Inland Harbor, Harbor Oaks, Otter Creek, and Pipers Point) have started but not finished construction. Adding the 618 units remaining to be completed at these project sites to the number of multifamily units indicated in Table FLU-1 brings the total number of multifamily units existing or to be constructed to 2,674, which translates into an overall density of 28.8 units per acre.

TABLE FLU-2  
RESIDENTIAL UNITS ISSUED  
BUILDING PERMITS SINCE JANUARY, 1980

<u>YEAR</u>	<u>SINGLE FAMILY PERMITS</u>	<u>DUPLEX PERMITS</u>	<u>MULTIFAMILY PERMITS</u>	<u>TOTAL RESIDENTIAL PERMITS ISSUED</u>
1980	42	2	21	65
1981	33	0	189	222
1982	23	6	341	370
1983	35	12	921	968
1984	29	8	530	567
1985	21	2	37	60

FOOTNOTES:

- (1) Through July, 1985
- (2) The substantial drop-off in permit issuance over previous years is primarily due to two factors:  
 (a) Most local builders are still selling and/or completing projects permitted in previous years;  
 and (b) Tax law changes and other financial uncertainties have delayed construction starts for a number of major projects, including the Ocean Gate Inn (214 condominium units), Settler's Landing (105 condominium units), "Accordian" (28 condominium units) and Yacht Haven Marina (22 condominium units).

## Existing Development Trends

Equally as important as existing land use in helping shape the future development of the Town are existing development trends. As with existing land use, some of these trends establish highly desirable precedents which provide the momentum necessary to guide development into appropriate locations. Other trends create roadblocks for the proper guidance of development. Several important Carolina Beach development trends are discussed below.

Protection of the RA-12 Zone - If any development trend in Carolina Beach can be considered sacrosanct, it is the continued maintenance of the existing RA-12 zoning district as the Town's primary single family residential area. Despite the existence of a fairly large number of sub-size nonconforming lots of record, the RA-12 area continues to be regarded as the Town's "large lot" single family residential district. Recent attempts to rezone portions of the RA-12 district, or to secure Conditional Use Permits for non-residential uses, have been met with failure.

It is particularly important for a rapidly-growing resort town to have residential areas like the RA-12 district. By establishing a history of commitment to maintaining these primary residential areas, the Town recognizes their economic and cultural importance. These are the areas where many of the Town's permanent residents live and, despite major changes in other parts of the Town, these areas will remain insulated from the effects of rapid growth.

Continuance of the State Park, Buffer Zone, and Other Environmental Areas - It is extremely unlikely that the lands controlled by other governmental agencies - the Carolina Beach State Park, the Sunny Point Military Ocean Terminal Buffer Zone, the Snow's Cut Spoil Easement, the Carolina Beach Lake marsh, and the Northern Extension wetlands - will ever be developed with urban land uses. These areas, which will be preserved in their natural state or receive limited recreational development, provide permanent open space within the Town's urban setting.

As has been discussed in other elements of this Land Use Plan, these open spaces provide aesthetic and economic benefits to the Town. Continued maintenance of these areas in their current condition by their respective regulatory overseers is in the Town's best interest, unless there are overriding public benefits to be derived from their conversion to other uses.

Multifamily Development of the Town's Beachfront - Unquestionably the most important development trend in the sixty year history of Carolina Beach has been the recent multifamily development of the Town's beachfront. Although this development has created some problems with regard to traffic congestion and increased demands for Town services, these problems have been

relatively minor when compared with the fiscal prosperity and improved Town image that has resulted.

So long as future multifamily development of the Carolina Beach oceanfront is constructed with regard to appropriate design standards which take into account the potential negative effects of high density and the reasonable expected risks of the oceanfront location, such development should continue to be encouraged by the Town, within the limits of available urban service provision.

Strip Commercial Development of the U.S. 421 Corridor - Despite a strong effort on the part of the Town to discourage strip development of U.S. 421 through the provision of a 400 foot deep B-3 zoning district, most development along U.S. 421 has tended to use the obvious commercial advantages of highway frontage rather than fully explore the possibilities provided by the depth of that commercial zone. In fact, the commercial necessity of the depth of the B-3 zoning has been called into question recently by a development proposal for a high density multifamily project in a "back" (non-frontage) portion of the zoning district.

Continued strip development of the U.S. 421 corridor will tend to undermine efforts to expand and redevelop the less visible B-1 zoning district and will create unnecessary traffic congestion and safety problems along the roadway. It is also important that the Town maintain control over the type of development which occurs in this corridor area since U.S. 421 serves as the primary entryway into Carolina Beach; crowded and cluttered strip commercial development would reflect negatively on the Town's image.

Development in the MB-1 District - The MB-1 zoning district, a "Marina Business" district originally established for commercial marina operations, is currently the site of some of the Town's most interesting and exclusive residential development projects. Existing projects include Inland Harbor, Harbor Oaks, Forest by the Sea, Otter Creek and Pleasure Cay. Two other projects, Mariner's Village and Yacht Haven, have received concept approval from the Town and await construction.

Of these existing and proposed projects, only Yacht Haven, with its combination of commercial marina and townhomes, constitutes a close match with the MB-1 district's title - Marina Business. In fact, due to possible incompatibilities with the existing residential projects described above, many of the "pure" marina business uses, such as seafood production and processing, have been recently deleted from the permitted use section of the MB-1 zoning district classification. Because of the existing development trend towards residential use in the MB-1 district, a re-evaluation of the purpose of that zoning district must occur, particularly with regard to encouragement of commercial fishing operations, one of the Town's major industries.

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This section of the Carolina Beach Land Use Plan contains what is traditionally regarded as a "land use plan", the Future Land Use Map. This map (Map FLU-2), along with its two Planned Development overlay maps (Maps FLU-3 and FLU-4), do serve the function of a traditional land use plan, which is to guide development into appropriate locations. However, because the policies and implementation procedures established for the other elements of this Land Use Plan have been carefully integrated into the Future Land Use Element, this map also interrelates a wide spectrum of Town goals and objectives in a future development program for Carolina Beach.

The section which follows the discussion of the Future Land Use Map(s) provides additional detail as to why particular land use patterns were selected. This section also considers the regulatory tools, such as the planned development concept, which allow Town officials to provide flexible guidance to the real estate and development sectors while still accomplishing the primary goals established for the future development of the Town.

#### Future Land Use Map

Map FLU-2 outlines the desired development pattern for future growth in Carolina Beach. Map FLU-2 constitutes a more specific version of the Land Classification Map required of this planning process by CAMA regulations; the actual Land Classification Map and its description are located in Appendix 4 (pp. 135-6). Seven generalized development categories are herein established for the Town as opposed to the three land use categories (Developed, Transition, and Conservation) established in the Land Classification Map:

- |                                     |                               |
|-------------------------------------|-------------------------------|
| (1) Government Managed Lands        | (4) High Density              |
| (2) Low Density                     | (5) Tourist & Amusement       |
| (3) Medium Density                  | (6) Central Business District |
| (7) Highway Business and Industrial |                               |

- (1) The Government Managed Lands development category encompasses those lands to be delineated as Conservation on the State Land Use Classification Map. (See Appendix A-4.). These are lands which, because of their environmental sensitivity, designation as a State park, or classification as a buffer zone, are extremely unlikely to ever be developed with urban land uses. These lands are, for the most part, zoned RA-20 on the Town's current zoning map. This zoning classification should, be utilized for these Government Managed Lands for two reasons: (a) The RA-20 classification is widely recognized as the Town's "holding zone" classification - that is, it is the zoning district from which undeveloped lands are rezoned to other uses. Placing or maintaining these lands under that zoning classification expresses their true development status to developers and realtors. (b) As the Town's most innocuous zoning classification, the RA-20 district provides an effective barrier to harmful development of the Government Managed Lands

MAP FLU-2: FUTURE LAND USE

**KEY: DEVELOPMENT CATEGORIES**

**GOVERNMENT MANAGED LANDS**

**LOW DENSITY**

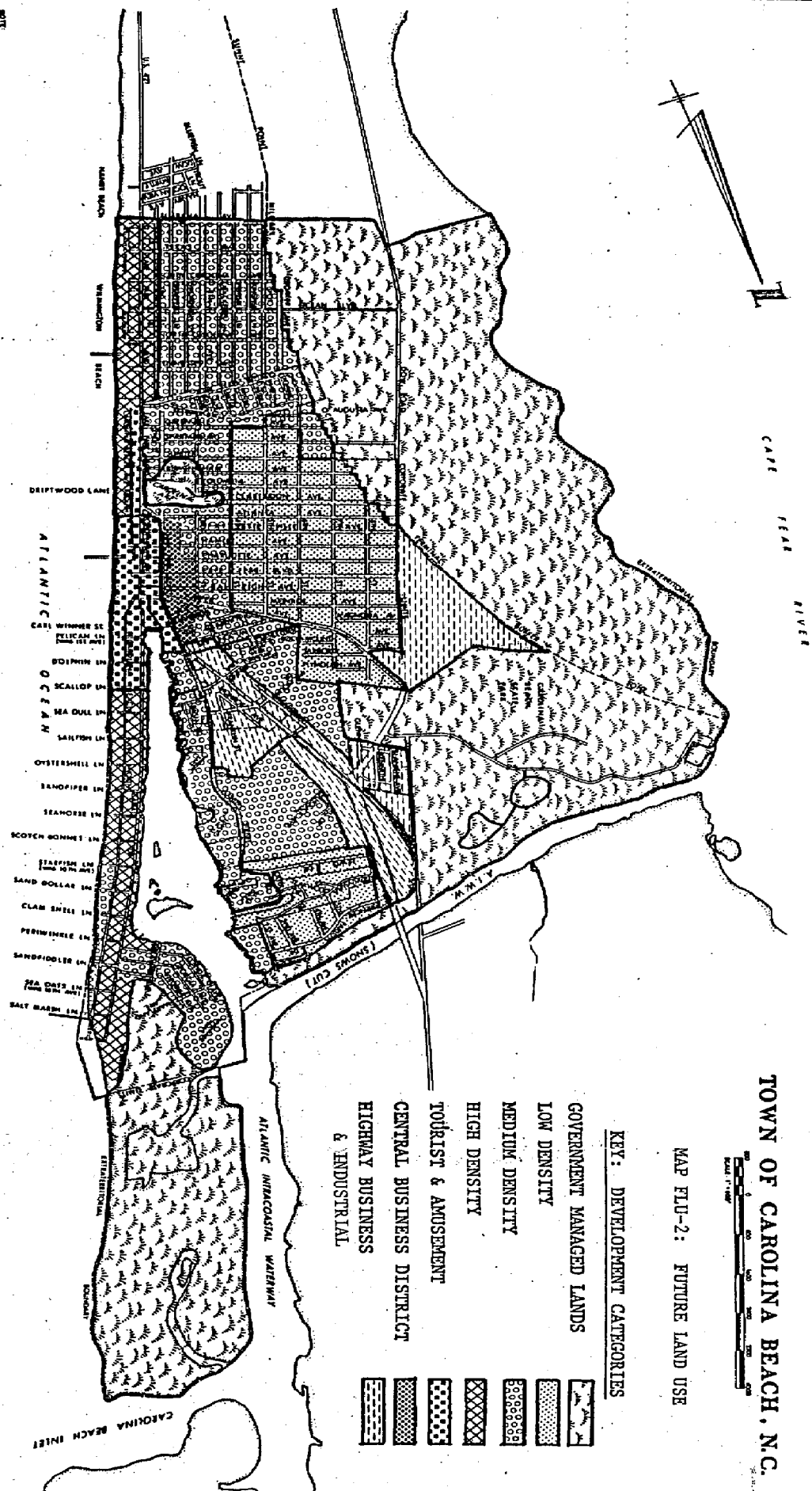
**MEDIUM DENSITY**

## HIGH DENSITY

TOURIST &amp; AMUSEMENT

**CENTRAL BUSINESS DISTRICT**

**HIGHWAY BUSINESS  
& INDUSTRIAL**



NOTE: THE APPLICATION OF THIS LAW WAS PUBLISHED IN MAY THROUGH  
AS USUAL, A LISTING OF THE UNITED STATES DEPARTMENT  
OF HOUSING AND URBAN DEVELOPMENT UNDER THE PROVISIONS OF  
SECTION 701 OF THE HOUSING ACT OF 1960 AS AMENDED.  
CARE MUST COMPLY, OF GOVERNMENTS  
JUNE 1960

The publication of this document was funded in part through a grant awarded by the North Carolina Management Program. This grant was provided by the Coastal Zone Management Act of 1972. As authorized, which is administered by the Office of Coastal Management, National Oceanic and Atmospheric Administration.

**STREET NAMES AND CORPORATE LIMITS CORRECT THRU 2008 PER**

should they ever be released for development. For example, should the Buffer Zone ever be opened for development, unless there was a massive, consequent upgrading of the Town's traffic circulation system, density higher than that allowed in RA-20 would result in traffic well above the rated capacity of the existing roadways and all current proposed improvements.

- (2) The Low Density development category is primarily reserved for residential land uses of under ten units per acre in density. The zoning classifications utilized for the Low Density category are RA-20, RA-12 and RA-7. This category includes the Town's primary single family residential area and those lands within and surrounding Pleasure Cay subdivision. Map FLU-3 indicates which of these Low Density areas are suitable for Residential Planned Developments which would allow multifamily development of up to ten units per acre.

Limited commercial development would also be allowed in certain specific portions of the Low Density development category. A new zoning classification - B-4: Planned Business - has been developed to allow this limited commercial development to occur among these primarily residential areas. The new B-4 zoning classification would allow the following commercial uses, subject to Town approval through the Business Planned Development Conditional Use Permit process: retail commercial, personal services (barber and beauty shops), offices, restaurants, galleries and museums, public and private community facilities and buildings, public and private schools, residential uses subject to density restrictions of the "parent" zone in conjunction with the Business Planned Development regulations, commercial marinas, hotels and motels (only in combination with commercial marinas), recreational uses, other similar uses as determined by the Town Council, and expansion of or additions to previously-existing land uses. Map FLU-4 indicates which areas of the Low Density development category are regarded as suitable for rezoning to B-4. Appendix A-3 contains the text of the B-4 zoning classification. This zoning classification is intended to be utilized only at the request of the property owner.

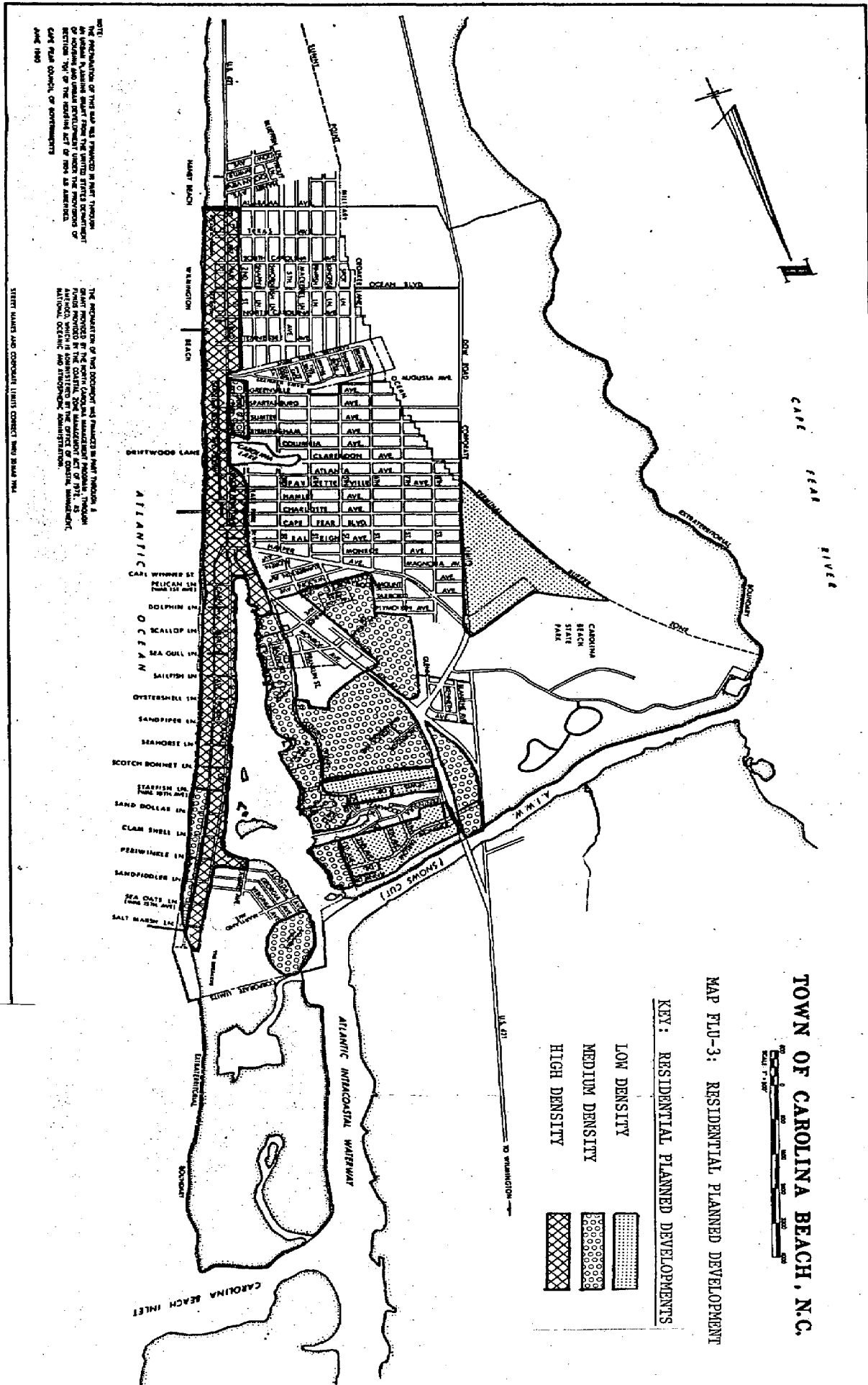
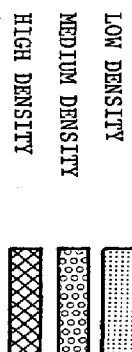
- (3) The Medium Density development category includes residential land uses of up to fifteen units per acre in density as well as limited commercial development. Mobile homes would also be allowed in a portion of this development category. (That area bounded on the east by Bowfin Lane, on the west by the Buffer Zone, on the north by Ocean Blvd. and on the south by Alabama Avenue.) The existing zoning classifications to be utilized for this development category are RA-6, RA-5 and RA-5T.



# TOWN OF CAROLINA BEACH, N.C.




MAP FLU-3: RESIDENTIAL PLANNED DEVELOPMENT

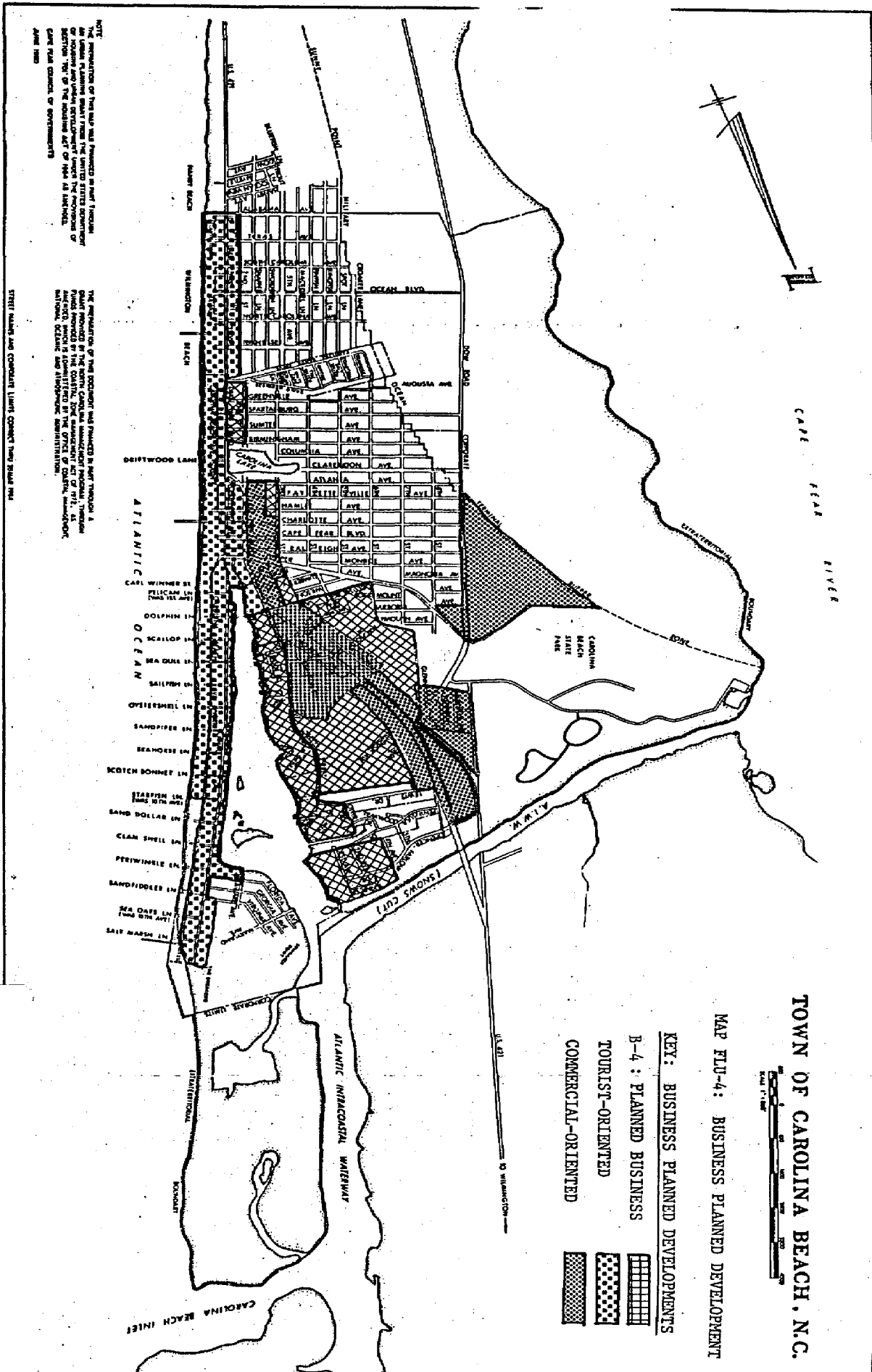
KEY: RESIDENTIAL PLANNED DEVELOPMENTS



NOTE: THE PREPARATION OF THIS MAP WAS FINANCED IN PART THROUGH THE PROCEEDS OF THE SALE OF THE CAROLINA BEACH STATE PARK, WHICH IS ADMINISTERED BY THE OFFICE OF COASTAL MANAGEMENT, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, AND THE CAROLINA BEACH CITY OF GOVERNMENTS.

THE PREPARATION OF THIS MAP WAS FINANCED IN PART THROUGH THE PROCEEDS OF THE SALE OF THE CAROLINA BEACH STATE PARK, WHICH IS ADMINISTERED BY THE OFFICE OF COASTAL MANAGEMENT, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, AND THE CAROLINA BEACH CITY OF GOVERNMENTS.

KEY: BUSINESS PLANNED DEVELOPMENTS	
B-4: PLANNED BUSINESS	
TOURIST-ORIENTED	
COMMERCIAL-ORIENTED	



Limited commercial development is also allowed in much of the Medium Density development category through the B-4 zoning classification. See Maps FLU-3 and FLU-4 for Medium Density areas suitable for Residential and Business Planned Developments.

- (4) The High Density development category includes residential land uses of between twenty-nine and forty-eight units per acre in density, along with hotel/motel and other tourist-oriented Business Planned Developments. The zoning classifications intended for this development category are RA-6A and RA-5A. The actual density allowed for any particular development project in the High Density category varies widely depending upon the location of the project and what parent zoning classification (RA-6A or RA-5A) is involved. For example, as will be discussed in the next section of this Element, Planned Development density increases are generally not allowed in the RA-6A zoning district (see the discussion of the Northern Extension in the following section), making the typical maximum allowable residential or hotel/motel density for that parent zoning classification, even with a Planned Development Conditional Use Permit, twenty-nine units per acre. Neighborhood business uses (B-2) are also allowed in selected areas.
- (5) The Tourist and Amusement development category serves as the Town's primary tourist district. By concentrating tourist facilities in a single area, conflicts with other land uses are avoided and pedestrian and other non-automobile traffic is encouraged, thereby reducing roadway congestion. The location of these facilities adjacent to the Town's Central Business District promotes a positive commercial interrelationship between the two types of land uses.

The Tourist and Amusement development category consists of an existing zoning classification (A-1: Amusement) and a new zoning classification (T-1: Tourist Commercial) developed to promote and encourage tourist commercial development in this area of Town. The T-1 zoning classification allows hotel and motel density of up to sixty-eight units per acre and includes provisions for restaurant and limited retail commercial development. Residential density mirrors that allowed in the RA-6A zoning district. The text of the T-1 zoning classification is provided in Appendix.

- (6) The Central Business District development category provides for the expansion of the Town's B-1 zoning district to: (a) Compensate for the rezoning of large portions of the existing B-1 district to

T-1; (b) Eliminate High Density multifamily zoning west of Lake Park Blvd. north of Carolina Sands subdivision; (c) Establish Third Street as the maximum penetration of commercial zoning into the existing residential areas; and, most importantly, (d) Provide sufficient space for the development of a viable, unified Central Business District in Carolina Beach. The purpose of this development category is therefore to establish a commercial district of sufficient size to encourage a wide variety of commercial uses adjacent to the Tourist and Amusement development category.

- (7) The Highway Business and Industrial development category is intended for more intensive commercial and/or industrial uses than would be suitable for either the B-1, B-2 or B-4 zoning districts. One portion of the development category is situated so as to provide commercial support for the Central Business District and lines U.S. 421 north of Goldsboro Avenue. A second area contains industrially-zoned property, primarily on the west side of Dow Road. A new Highway Business area is established at the intersection of Dow Road and U.S. 421 in order to take advantage of that location's growing importance as a commercial node and to serve as an incentive for the redevelopment of the area's existing mobile home park into commercial uses.

#### Development Issues

The above section has established a future land use pattern for the Town of Carolina Beach. While this pattern serves as a general development framework for the Town, additional detail is required regarding particular planning areas such as the Northern Extension. The rationale for eliminating one existing zoning district (MB-1)

TABLE FLU-3:  
LAND USE COMPATIBILITY

<u>GENERALIZED LAND USE CLASSIFICATION</u>	<u>RELEVANT ZONING DISTRICT(S)</u>	<u>PRIMARY COMPATIBLE LAND USES</u>
Government Managed Lands	RA-20	Recreation; Open Space; Natural Areas
Low Density	RA-12; RA-7; B-4	Single Family; Multifamily uses of up to 10 units/acre (with RPD CUP; see Map FLU-3 for locations); B-4 BPD's (see Map FLU-4 for locations)
Medium Density	RA-7; RA-6; RA-5 RA-5T; B-4	Single Family; Duplex; Multifamily uses of up to 15 units/acre (with RPD CUP; see Map FLU-3 for locations); Mobile Home (RA-5T areas only); B-4 BPD's (see Map FLU-4 for locations)
High Density	RA-6A; RA-5A; B-2	Multifamily uses of up to 47 units/acre (with RPD CUP); Hotel/Motel uses of up to 52.5 units per acre (with BPD CUP); B-2 uses; Tourist-Oriented BPD's
Tourist Amusement	A-1; T-1	Hotel/Motel uses of up to 67.5 units/acre (with BPD CUP); Tourist-Oriented BPD's
Central Business District	B-1	Retail sales and other commercial uses associated with a central business district; commercially-oriented BPD's
Highway Business and Industrial	B-3; I-1	Retail and Wholesale sales and other commercial uses associated with highway business; commercially-oriented BPD's; IPD (light manufacturing); industrial uses allowed in the I-1 zoning classification.

INDEX TO ABBREVIATIONS

CUP - Conditional Use Permit  
RPD - Residential Planned Development  
BPD - Business Planned Development  
IPD - Industrial Planned Development

also needs to be more fully explored. Finally, certain regulatory tools, such as the Planned Development concept, must be discussed in terms of how they will be used to shape the growth of Carolina Beach.

Northern Extension - Perhaps the most critical planning area in Carolina Beach is the Northern Extension. Because of this area's relative isolation from much of the Town's traffic circulation system (there is only one way on or off the Northern Extension), there is the potential for major traffic problems. Despite the transportation system improvements proposed in the Traffic Circulation Element for the Northern Extension, density control is the only possible method for avoiding long-term roadway capacity problems. (See Appendix 5, p.137) Consequently, the density increases allowed in the Residential and Business Planned Development sections of the Town's Zoning Ordinance should not be applied to this area north of Scallop Lane.

Despite the above admonition, the Town should allow specific density increases on the Northern Extension for the purpose of increasing public access to the ocean and sound. These increases would be allowed only through the following process. If oceanfront and/or soundfront lots are dedicated to the Town for public recreational use, a density transfer of one and one half times the number of units allowed on the dedicated lots under then - existing zoning shall be allowed if the transfer is to interior lots (i.e., lots between Carolina Beach Avenue North and Canal Drive). This density transfer shall only be permitted as part of the Planned Development Conditional Use Permit process. The property-owner has the right to negotiate the type of public facilities to be constructed on the dedicated lots, along with the timing of the construction of these facilities.

A final issue concerning density on the Northern Extension also needs to be discussed. The oceanfront area north of Starfish Lane and east of Carolina Beach Avenue North has more severe density limitations imposed upon it by environmental regulatory agencies than do other oceanfront areas in the Town. Consequently, in order to reduce property-owner confusion over what can be constructed on these oceanfront lots, this area is to be rezoned to RA-6, a zoning category more reflective of the actual development conditions existing for this property.

Carolina Beach Avenue South - This area between the ocean and U.S. 421 is also suitable for the density transfer for public recreational land dedication discussed above. However, the density transfer should be based upon one and one half times the density allowed under a Planned Development Conditional Use Permit for the areas to be dedicated, rather than utilizing existing zoning as the density transfer criterion as in the Northern Extension situation.

A second issue for this area concerns the fact that the oceanfront lots east of Carolina Beach Avenue South do not conform to the lot size requirements of the RA-6A zoning classification. In order to correct this problem, rezoning of the area south of Atlanta Avenue and east of Carolina Beach Avenue South to RA-5A should be accomplished.

Central Business District - Parking space availability has become a problem for the Town's Central Business District in recent years. Some off-street parking is now required by the Town's Zoning Ordinance, but these requirements may restrict many commercial uses on particular properties. In order to assist funding a Central Business District parking lot or deck, the following options should be considered for inclusion in the Zoning Ordinance: (1) As an alternative to providing the required off-street parking, the property-owner would have the option of paying \$2500 per required space to the Town to be placed into a fund for the construction of centralized parking facilities in the Central Business District; and/or (2) A special tax/assessment district could be established for the construction of the central parking facility.

Elimination of the MB-1 Districts - Alternatives to the MB-1 zoning district are put forward on the Future Land Use Map and its overlay maps. Consequently, this district can be deleted from the Town's Zoning Ordinance. The MB-1 district classification as it currently exists has been rendered ineffective by the land uses which have been developed in that district. Commercial marinas can be developed on the west side of Myrtle Grove Sound through the new B-4 zoning, which also provides an incentive for such development by allowing hotel/motel uses, if such uses are in conjunction with a commercial marina. The RA-6 zoning classification reflects much more accurately the appropriate density level for the area than do the MB-1 district regulations.

Planned Developments - Increasingly, Carolina Beach Town officials have come to rely upon the Conditional Use Permit for Planned Development as a means of promoting desired development while protecting existing neighborhoods from

the possible negative effects of such development. The three types of planned developments allowed by the Town - Residential, Business, and Industrial - are also popular with developers because of the inherent flexibility of the planned development concept. Through the preservation of open space and the provision of adequate traffic circulation systems and buffers, for example, a commercial or industrial development can be located adjacent to a low density single family residential neighborhood without the usual conflicts between the two land use types.

The new B-4 zoning district provides an added facet to the Town's Planned Development regulations. This district gives the Town more control and developers more flexibility in the location of light commercial uses near residential areas.

Another important addition to the Town's Planned Development concept are the two Planned Development overlay maps (Maps FLU-3 and FLU-4). These maps state both the location and the intensity of the Planned Developments allowed in the Town. This will serve to reduce developer confusion regarding Planned Development submissions and provide valuable instruction for Town officials and boards in their review of submitted plans.

Site Plan Design Standards - In order to promote better site design of projects approved through administrative review, it is necessary that proper design standards be required of developers. Many of these standards will be set out in detail in scheduled revisions to the Town's Subdivision Ordinance; other design standards are contained within the Town's Zoning Ordinance. The Town's Engineering and Planning Departments will produce a summary of design standards for dissemination to interested parties in 1986.

Administrative Rezoning - If the land use patterns established in this Element are to be realized to their fullest extent, administrative rezoning of a number of properties will be necessary. The properties in question are described below. Appendix A-3 contains information regarding these changes.

- Rezone Carolina Beach Lake conservation area (those areas designated as "404" wetlands by the U.S. Army Corps of Engineers) to RA-20.
- Rezone the areas surrounding Pleasure Cay Subdivision and shown on Map FLU-2 as Low Density to RA-7



- Rezone MB-1 and RA-6A areas on the western edge of Myrtle Grove Sound to RA-6.
- Rezone the area designated for the T-1 zoning district (See Appendix A-3 for the location of this district.)
- Rezone to B-1 and RA-6 the RA-6A area adjacent to the existing B-1 district
- Rezone to RA-6 the B-1 area west of Third Street
- Rezone to B-3 the commercial node at the intersection of Dow Road and U.S. 421
- Rezone to RA-6 the RA-6A oceanfront area north of Starfish Lane and east of Carolina Beach Avenue North
- Rezone to RA-5A the RA-6A area south of Atlanta Avenue and east of Carolina Beach Avenue South.
- Rezone to RA-6 the RA-6A area west of U.S. 421 at Snow's Cut
- Rezone to RA-20 the RA-6A zoned land at the Carolina Beach State Park entrance
- Rezone to RA-7 the RA-20 areas described below:
  - (a) The area bounded on the north and west by Dow Road, on the east by the current B-3 zoning district and on the south by Goldsboro Avenue.
  - (b) The area between the existing B-3 zoning district and St. Joseph's Street, north of the Federal Point Shopping Center and south of the lots located on the southern edge of Lewis Drive.

Rezoning by Request - Rezoning at the request of the property-owner will be sufficient to accomplish the goals of this Land Use Plan for the remainder of the properties which are not zoned according to the development categories established in Map FLU-2, so long as the granting of any such rezoning requests are consistent with those categories. (See Table FLU-2.)

Nonconforming Situations and Uses - Whenever nonconforming situations and uses are created by ordinance changes or development standards adopted as part of this Element, those situations and uses shall have the full rights allowed similar nonconforming properties under Article 900: Nonconforming Situations of the Town of Carolina Beach Zoning Ordinance.

## POLICIES AND IMPLEMENTATION PROCEDURES

In order that the future development patterns described above can be achieved, the following policies and implementation procedures are established by and for the Town of Carolina Beach. Policies are official guidelines set down for present and future decision-making: they are broad in scope to allow the degree of flexibility necessary to adequately accommodate changing conditions in a rapidly-growing resort area like Carolina Beach. Implementation procedures are directives to the Town Manager and staff as to how the policies are to be administratively enacted; they are necessarily specific to the issues in question.

### Policies

- (1) THE FUTURE LAND USE ELEMENT SHALL, UPON ITS ADOPTION AND UPON THE ADOPTION OF ANY SUBSEQUENT REVISIONS, SERVE AS THE OFFICIALLY-ESTABLISHED LAND DEVELOPMENT GUIDE FOR THE TOWN OF CAROLINA BEACH.

This policy establishes the Future Land Use Element as the Town's official land development guide, giving it validity as both an administrative and a decision-making tool.

- (2) THE TOWN COUNCIL MAY, AT ITS DISCRETION, ADOPT ANY AND ALL CHANGES TO THE TOWN OF CAROLINA BEACH ZONING ORDINANCE AND ZONING MAP DEEMED NECESSARY TO ACCOMPLISH THE PURPOSE OF THE FUTURE LAND USE ELEMENT AS A DEVELOPMENT GUIDE.

This policy insures that the necessary changes to the Town's zoning ordinance and map will be made in order to achieve the purpose and intent of the Future Land Use Element as a guide for development in Carolina Beach.

- (3) PUBLIC PARTICIPATION IN ALL FUTURE LAND USE AND OTHER DEVELOPMENT DECISIONS SHALL BE ENCOURAGED.

Public participation is considered by the Town to be an essential element in all development-related decisions. Such participation shall be encouraged in all future development decisions.

#### Implementation Procedures

- (1) Insure that the intent of the Future Land Use Element is considered in the processing of development plans and requests.

The Town Manager and staff are hereby directed to consider the intent of the Future Land Use Element in the processing of all plans and requests pertaining to the development of the Town of Carolina Beach.

- (2) Implement the directives of the other elements of the Land Use Plan in a manner consistent with the development guidelines established in the Future Land Use Element.

Because the Future Land Use Element is a development program which incorporates the directives of the other Land Use Plan Elements, it is imperative that the Town Manager and staff implement the directives of the other elements in a manner which is consistent with the Future Land Use Element.

- (3) Encourage public participation in all development-related decisions.

The Town Manager and staff are directed to utilize all available media sources to encourage a wide variety of public participation in both formal and informal settings, in all development decisions undertaken by the Town.

- (4) Further examine the Town's various commercial zoning classifications and develop a comprehensive program, including zoning incentives to encourage compatible community development.

The Town Manager and staff, along with the Planning and Zoning Commission are directed to develop a comprehensive commercial zoning program for consideration by the Town Council.

- (5) Prepare for consideration additional ordinances, resolutions and incentives, as needed, to protect, preserve, and enhance the established development guide for the Town of Carolina Beach.

The Town Manager and staff are directed to keep a continued close watch on the Town's growth and development. Preparation for consideration of new ordinances, resolutions, and incentives that provide positive direction to this growth is strongly encouraged.

TECHNICAL APPENDICES

## APPENDIX 1 LAND USE SURVEY

On February 25, 1985, the Carolina Beach Town Council, as part of the Town's 1985 Land Use Plan update, authorized the distribution of a 49 question land use survey. The survey was intended to measure the attitudes and opinions of residents and property owners with regard to a number of important questions concerning the use of land in the Town. The survey was distributed by individual mailings to Town water customers, and by placing surveys in public locations such as the Town Hall, Library, Post Office, Chamber of Commerce and the lobbies of major condominium projects. The individual mailings contained a stamped, self-addressed return envelope and were followed up by a "reminder" mailing approximately one week after the initial mailing date to encourage response.

Of the 2,045 surveys which were either mailed or set out, 1,134 were returned. The response rate for the survey distribution was 55.5 percent, an above average response for a survey of this type and length. The number of responses was approximately evenly divided between residents and non-residents, with 574 residents responding and 557 non-residents responding.

From the individual survey answers, a data base was produced. This data base is summarized in the figures and tables which follow the text of this Appendix. The data base summary was compiled under contract by Mr. Lee Durrance of Lowrimore, Warwick & Company. An analysis of the data summary is provided below.

### POPULATION AND HOUSING CHARACTERISTICS OF RESPONDENTS

The following characteristics of those persons responding to the survey are provided in order to shed some light on the perspectives and concerns of the Town's residents and property owners. By including population and housing characteristic questions on the survey, it is possible to separate out individual respondent groups and compare the survey answers of these different groups. The summaries and analyses which follow this section, for instance, divide the total respondent data base into the following groups: Residents Over 64 (years of age); Residents Under 65 (years of age); Total Residents; and Total Non-Residents. This allows for a meaningful cross-comparison of answers by respondent group.

Age, Sex, Occupation, Voting Status and Education

	<u>Resident</u>	<u>Non-Resident</u>
Median Age	48	52
Sex (% Male)	60.8%	67.5%
Occupation (% by Type)	1. Professional/Technical (30.9%) 2. Retired (26.4%) 3. Manager/Proprietor (14.9%)	1. Professional/ Technical (36.7%) 2. Retired (22.3%) 3. Manager/Proprietor (21.9%)
Voting Status (% Registered in New Hanover County)	83.1%	13.1%
Median Years of Education	14	15

Analysis: The relatively-high median age and preponderance of male respondents is likely due to the "head-of-household" completing the survey. The number of "non-local" non-residents (i.e., those non-residents not registered to vote in New Hanover County) was surprising; apparently only a small proportion of nonresident property owners live in New Hanover County. The typical respondent was a male, in his late forties or early fifties, with two to three years of college and working in a professional/technical or managerial/proprietor field or retired.

Residence Type and Location

	<u>Resident</u>	<u>Non-Resident</u>
Residence Type		
a. Single Family House	73.8%	56.5%
b. Duplex	5.4%	7.5%
c. Condominium/Townhouse	14.3%	23.1%
d. Mobile Home	1.9%	0.9%
e. Other	1.7%	0.7%
Residence Location		
a. East of U.S. 421	40.8%	62.3%
b. West of U.S. 421	55.4%	22.5%

Analysis: One of the most interesting results of the survey involved residence type and location. It would generally be expected in a resort community like Carolina Beach for most residents to live in single family homes away from the higher density areas east of U.S. 421. This proved to be the case as 55.4 percent of the residents lived west of U.S. 421 and 73.8 percent lived in single family homes.

However, the results concerning housing type for non-residents did not follow trends which might have been expected prior to the survey. While housing location for non-residents seems predictable (62.3% located east of U.S. 421), choice of residence type was not predominately condominium. In fact, single family residences constituted the majority (56.5%) of non-resident housing type, with condominiums and townhouses being a distant second (23.1%).

One explanation for this incongruity might be tht because water customer addresses were used for the survey mailing, fewer condominium owners received surveys since many condominium buildings utilize a single water meter and pay water bills out of homeowners dues. Another, less likely possibility is that non-residents owning multifamily units in Carolina Beach are concerned primarily with the investment potential of the housing type and were not likely to bother with completing a land use survey. More study needs to be done on this issue so that if and when future surveys of this type are attempted some way will be found to correct for this inequitable distribution, if in fact one exists.

#### LAND USE SURVEY RESULTS

This section considers the answers to Questions 1-40 on the Land Use Survey. These questions constitute the bulk of the information the Town was interested in obtaining from the Survey. An analysis of the results of each question is included when it is necessary for interpretation.

#### About the Environment, Open Space and Recreation

1. Between 85 and 90 percent of all respondent groups felt that it was "Very Important" or "Important" for the Town to more strictly regulate signs, outdoor lighting and other things which affect appearance.
2. Approximately 93 percent of all respondent groups felt that it was "Very Important" or "Important" for the Town to better regulate buildings in a state of disrepair.
3. Between 88 and 95 percent of all respondent groups thought the preservation of open space along the ocean beaches was "Very Important" or "Important".
4. Between 77 and 83 percent of all respondent groups thought the preservation of open space along the sound was "Very Important" or "Important".
5. Between 72 and 83 percent of all respondent groups thought the preservation of open space along Carolina Beach Lake was "Very Important" or "Important".



6. Response to Question 6 differed markedly with regard to residential status. Only 43.9 percent of non-resident respondents felt the need for greater separation between the tourist and residential areas, compared with 58.0 percent for resident respondents. It seems likely that non-residents expect and accept the activity associated with tourist activities but that residents do not.
7. Between 67 and 78 percent of all respondent groups thought greater separation between residential and commercial areas was "Very Important" or "Important".
8. As to whether there was a need for greater separation between single family and multifamily residential areas, there is a substantial difference by residential status. Only 51.9 percent of non-resident respondents felt such separation is necessary, compared with 60.7 percent of resident respondents under 65 years of age and 69.9 percent of resident respondents 65 years old or over.
9. The question asked the respondents to identify needed recreational facilities which should be provided by the Town. The five most-needed facilities as identified by resident and non-resident respondents are listed below. See Figures A-1 through A-3.

#### RESIDENTS

#### NON-RESIDENTS

- |                               |                            |
|-------------------------------|----------------------------|
| 1. Beach Access Facilities    | 1. Beach Access Facilities |
| 2. (Senior) Activities Center | 2. Bikeways/Jogging Paths  |
| 3. Bikeways/Jogging Paths     | 3. Sound Access Facilities |
| 4. Playgrounds                | 4. Boat Ramps              |
| 5. Indoor Gym                 | 5. Playgrounds             |

10. The responses to the first section of Question 10 found the respondents about evenly divided as to whether the number of beach access facilities were adequate (43% said "yes"; 44% said "no"). The type of beach access facilities being provided by the Town and the State was regarded as adequate by a margin of 54% to 28%.
11. This question regarding sound access facilities resulted in the following respondent breakdown: 29% found the facilities to be adequate; 33% found them to be inadequate; and 35% were not sure. Because the Town has relatively few developed sound access areas, and these areas are not clearly marked, the number of persons answering "Not Sure" is not surprising.
12. From the responses given by all respondent groups, it appears that the Town's other recreational facilities are generally regarded as inadequate. Only 24% of all respondents indicated that the facilities were adequate with 45% rating them as inadequate. Among resident respondents under 65 years of age, these figures were 21% (adequate) and 62% (inadequate).

From the response to this question, as well as to Question 9 (preceding) and 25 (following), it would seem that the Town's recreational facilities are regarded as needing improvement, particularly by younger residents.

13. There was support across all respondent groups for developing the Town Marina to include a public park/leisure area, with 57% of the respondents favoring such development and 25% opposing it.

Analysis: There was overwhelming support for better regulatory control over the appearance of the Town and for the preservation of the major open space areas within Carolina Beach while this support was understandably strongest among residents, non-residents also expressed strong concern for these issues.

Separation between major land use types was regarded as significantly more important by resident than by non-resident respondents. It is likely that non-residents expect more overlapping commercial and residential land uses in a resort area than do residents.

#### About Traffic and Parking

14. Approximately 65% of all respondents favored the creation of one-way streets in the tourist areas in order to improve traffic circulation.
15. There was strong support for additional traffic signals on U.S. 421, with 71% of all respondents favoring additional signals. Support was strongest among resident respondents under 65 years of age, with 81% favoring additional signals.
16. As to whether tourist facilities should be restricted to one area of Town, 53% of all respondents indicated that they favored such restrictions. Eighty-five percent (85%) of resident respondents over 65 years of age favored the restrictions. Non-resident respondents were generally less supportive of a central tourist area than were resident respondents.
17. (The answers to this question have not yet been compiled by the consultant.)

18. If a central parking lot or deck is constructed, respondents feel funding for its construction should come from government in conjunction with business (36%) or from business owners alone (28%). Many respondents suggested that a user's fee be utilized to assist in funding central parking facilities.

Analysis: There is widespread sentiment for improved traffic control in Carolina Beach, with strong support existing for additional traffic signals and for making certain streets one-way.

#### About Hurricane Evacuation

19. Over 90% of resident respondents under age 65 and over 87% of resident respondents over age 64 were in Carolina Beach when Hurricane Diana threatened the North Carolina coastline. Almost 24% of non-resident respondents were also in the Town at that time. Of the respondents who were in Carolina Beach during the hurricane, approximately 72% of the residents and 89% of the non-residents evacuated when warned. In the event of another hurricane threatening Carolina Beach, approximately the same percentage of resident and non-resident respondents would evacuate again when warned.
20. Results to this question cannot be regarded as a true indication of behavior to be expected by those residents and non-resident respondents who were not in Carolina Beach during Hurricane Diana; this is because a number of respondents who answered "Yes" to Question 19, disregarded survey instructions and also answered this question as well. However, two general trends can be extrapolated from these results: (1) Most respondents would evacuate when warned; and (2) Non-resident respondents are considerably more likely to evacuate when warned than are resident respondents.
21. Fifty-seven percent (57%) of all respondents felt the Town's roads and bridge were adequate to handle traffic from a hurricane evacuation.

Analysis: Despite concern on the part of various emergency services planners to the contrary, the fact that Carolina Beach escaped Hurricane Diana's fury with relatively minor damage does not seem to have resulted in complacency among the Town's residents and property-owners with regard to hurricane evacuation. The survey results indicate that approximately the same percentage of evacuees can be expected should another hurricane threaten the Town.

## About Town Services

22-32. These questions were intended to measure the level of satisfaction with various Town services. The following list ranks the services in terms of the level of satisfaction expressed by survey respondents; the services are listed in order from most satisfactory to least satisfactory.

- (1) Sewer and Water (75% Satisfied or Very Satisfied)
- (2) Police (71% Satisfied or Very Satisfied)
- (3) Lifeguards (65% Satisfied or Very Satisfied)
- (4) Fire (61% Satisfied or Very Satisfied)
- (5) Garbage Collection (60% Satisfied or Very Satisfied)
- (6) Public Buildings (56% Satisfied or Very Satisfied)
- (7) Mangement/Administration (48% Satisfied or Very Satisfied)
- (8) Recreation (38% Satisfied or Very Satisfied)
- (9) Marina (53% Disatisfied or Very Disatisfied)
- (10) Drainage (63% Disatisfied or Very Disatisfied)
- (11) Streets (78% Disatisfied or Very Disatisfied)

33.a. This question requested that respondents indicate which Town services they would be willing to pay to see improved. The five most chosen responses by resident and non-resident respondent groups are provided below. See Figures A-4 through A-6.

### RESIDENTS

- (1) Streets
- (2) Drainage
- (3) Recreation
- (4) Fire Protection
- (5) Marina

### NON-RESIDENTS

- (1) Streets
- (2) Drainage
- (3) None
- (4) Fire Protection
- (5) Marina

33.b. This question was intended to measure both the desire and willingness to pay for improved Town services. While there was some duplication of answers (i.e., people who checked both "Issue Bonds" and "A combination of the above"), there was a clear consensus that most respondents, residents and non-residents alike, wanted the Town to embark on a fiscal path which would achieve service improvement within a short (five year) period. Eighty-three percent (83%) of all respondents chose answers which indicated their support for a faster pace in service improvements. See Figures A-7 through A-9.

Analysis: When comparing the satisfaction rankings of Town services with respondent willingness to pay to see the unsatisfactory services improved, there is a very evident consistency: The three most unsatisfactory services were in the top five of the list of services respondents would pay to see improved.

Somewhat surprising was the inclusion of fire protection on the list of services respondents were willing to pay

to see improved. It is assumed that the frequent publicity over the purchase of an elevated stream fire truck has resulted in a heightened concern about fire protection in the Town.

Not so surprising was the inclusion of recreation on the resident respondents' list of services they would pay to see improved. Responses to Questions 9, 13, and 25 all indicate that the Town's current recreational amenities are regarded as inadequate.

Respondents also show little patience with regard to gradual improvement of the unsatisfactory services. Approximately 83% of all respondents prefer the Town to embark on some form of financing which achieves improvement of these services within the next five years.

#### About Zoning and Land Development

34. Approximately 42% of all respondents felt that current multifamily density is about right, with 33% feeling that this level of density is still too high.
35. There was fairly strong sentiment for the preservation of the Town's Boardwalk area, but only if it can be made more attractive to families. Fifty seven percent (57%) of all respondents preferred this option, compared with 25% who favored conversion to other uses and 9% who favored unconditional preservation.
36. Providing incentives to developers for the construction of moderate cost housing was preferred by a two-to-one margin over allowing planned multifamily development into existing residential areas.
37. Approximately 72% of all respondents favored either restricting mobile homes to areas currently zoned for mobile homes (45%) or not allowing mobile homes at all in Carolina Beach (28%).

Analysis: Current multifamily density levels are generally judged to be about right by most respondent groups, although resident respondents over age 64 tended to feel that existing levels are too high. Mobile home development was not judged to be appropriate for expansion by most respondent groups. A substantial percentage of respondents (57%) felt the Boardwalk should be preserved if it is made more attractive to families.

#### About Growth Management

38. Around 61% of all respondents thought Carolina Beach should attempt to reduce its current pace of growth. Seventy-six percent (76%) of the resident respondents over 64 years of age favored a slower or much slower growth pace.

39. The proportion of residential to commercial land uses was judged to be "about right" by 49% of all respondents.
40. As to who should pay for further growth in the Town, 51% of the respondents suggested that the developers of new projects should pay for the additional costs associated with new development, while 36% thought these costs should be shared by local government and developers. Among resident respondents over 64 years of age, 67% felt that developers should bear the costs of further growth.

Analysis: The rapid growth experienced by the Town in recent years has resulted in about the right proportion of residential and commercial uses according to all respondent groups. That same growth has increased the desire among all respondent groups for a slower pace of growth and for more developer responsibility for the public service costs which result from new development.

#### DATA BASE SUMMARY

This section of Appendix A provides figures and tables which summarize the data compiled from the 1,134 Land Use Survey forms which were returned. Figures A-1 through A-9 illustrate on graphs the survey results for three important questions (9, 33a, and 33b) dealing with Town services.

Tables A-1 through A-5 provide summarized results by respondent type for questions 1-40, excepting Question 9, 33a and 33b for which graphical summarization was used. Tables A-6 through A-8 provide summarized results for population and housing characteristics for Residents, Non-Residents, and All Respondents. The information provided in these tables indicates the percentage of respondents choosing each answer. A keyed survey form is provided to assist interpretation. Responses in the "0" column indicate respondents that did not answer the question.

TOWN OF CAROLINA BEACH  
LAND USE SURVEY

This is a survey about your opinions on how land should be used in the Town of Carolina Beach, North Carolina. For each question, please circle or check-mark your answer. If you wish, you may add comments in the margins and on the back of this survey form.

ABOUT THE ENVIRONMENT, OPEN SPACE AND RECREATION

We would now like you to begin by answering a few questions about the Carolina Beach environment, about recreation and about the preservation of open space within the Town. Please circle the answer that best describes how important each of these issues is to you.

1. The need for stricter regulation of signs, outdoor lighting, and other things that affect appearance.

Very Important	Important	Not Sure	Unimportant	Very Unimportant
1	2	3	4	5

2. The need for stricter regulation of buildings in a state of disrepair.

Very Important	Important	Not Sure	Unimportant	Very Unimportant
1	2	3	4	5

3. The preservation of open space along the ocean beaches.

Very Important	Important	Not Sure	Unimportant	Very Unimportant
1	2	3	4	5

4. The preservation of open space along the sound.

Very Important	Important	Not Sure	Unimportant	Very Unimportant
1	2	3	4	5

5. The preservation of open space along Carolina Beach Lake.

Very Important	Important	Not Sure	Unimportant	Very Unimportant
1	2	3	4	5

6. The need for greater separation between the tourist areas and the residential areas.

Very Important	Important	Not Sure	Unimportant	Very Unimportant
1	2	3	4	5

7. The need for greater separation between business areas and the residential areas.

Very Important	Important	Not Sure	Unimportant	Very Unimportant
1	2	3	4	5

8. The need for greater separation between single family residential areas and multifamily residential areas.

Very Important	Important	Not Sure	Unimportant	Very Unimportant
1	2	3	4	5

9. Listed below are several possible recreational facilities. Please check any that you feel are important enough to be built at public expense.

_____ Beach access areas	_____ Ball fields
_____ Sound access areas	_____ Golf courses
_____ Boat ramps and moorings	_____ Bikeways, jogging paths
_____ Indoor gym	_____ Playgrounds
_____ Tennis courts	_____ Lake access areas
_____ Activities center (including senior activities)	_____ Other (Please specify)

- 10.a. Do you feel the present number of ocean access areas are adequate?

Yes	No	Not Sure
1	2	3

- 10.b. Do you feel the present types of ocean access facilities are adequate?

Yes	No	Not Sure
1	2	3

11. Do you feel the present sound access areas are adequate?

Yes	No	Not Sure
1	2	3

12. Do you feel the Town's other recreational facilities are adequate?

Yes	No	Not Sure
1	2	3

13. Would you like to see the Town's Marina developed to include a public park/leisure area?

Yes	No	Not Sure
1	2	3

#### ABOUT TRAFFIC AND PARKING

Traffic is another concern related to land use. By answering the following questions, you can let us know how you feel about traffic issues in the Town of Carolina Beach.

14. Do you favor creation of one-way streets in the multifamily and tourist areas to control the flow of traffic? (such as Carolina Beach Avenue and Canal Drive)

Yes	No	Not Sure
1	2	3



15. Do you favor additional traffic signals on U.S. 421 to control the flow of traffic?

Yes

No

Not Sure

1

2

3

16. Do you favor restricting most tourist facilities (motels, hotels restaurants) to one area of the Town to control the amount of tourist traffic in residential areas?

Yes

No

Not Sure

1

2

3

17. The Town's downtown business areas have a shortage of parking. Which, if any, of the following solutions do you favor to solve this problem? (Please check all that apply)

1 Construction of a parking lot or deck in a central location

2 On-street parking

3 Business provide more off-street parking

4 I'm not sure

5 Other \_\_\_\_\_

18. If a parking lot or deck is constructed, who do you think should pay for it?

1 Local government

2 Local government and business owners

3 Business owners

4 I'm not sure

5 Other \_\_\_\_\_

#### ABOUT HURRICANE EVACUATION

The Town of Carolina Beach was hit by Hurricane Diana last fall. The information you provide in the following questions will be of great use to the Town in its preparation for possible future hurricanes.

19.a. Were you in Carolina Beach when Hurricane Diana threatened the North Carolina coast?

Yes

No

1

2

If you answered "No" to Question 19.a., please skip to Question 20. If you answered "Yes", please answer Question 19.b. and 19.c. below, then skip to Question 21.

19.b. During Hurricane Diana, did you evacuate when warned?

Yes	No
1	2

19.c. If another hurricane threatened Carolina Beach, would you evacuate when warned?

Yes	No
1	2

20. If given notice, would you evacuate during a hurricane warning?

Yes	No	Not Sure
1	2	3

21. Do you feel the Town's roads and bridges are currently adequate for the purpose of hurricane evacuation?

Yes	No	Not Sure
1	2	3

#### ABOUT TOWN SERVICES

The most important thing a town can offer to its citizens and visitors is adequate services. The following questions are intended to measure your satisfaction with existing Town services. If you have suggestions for improving any of these services, please write them in your answer to Question 45.

22. How satisfied are you with the condition of the Town's streets?

Very Satisfied	Satisfied	Not Sure	Unsatisfied	Very Unsatisfied
1	2	3	4	5

23. How satisfied are you with the Town's water and sewer services?

Very Satisfied	Satisfied	Not Sure	Unsatisfied	Very Unsatisfied
1	2	3	4	5

24. How satisfied are you with the Town's drainage system?

Very Satisfied	Satisfied	Not Sure	Unsatisfied	Very Unsatisfied
1	2	3	4	5

25. How satisfied are you with the Town's recreational facilities?

Very Satisfied	Satisfied	Not Sure	Unsatisfied	Very Unsatisfied
1	2	3	4	5

26. How satisfied are you with the condition of the Town's Marina?

Very Satisfied	Satisfied	Not Sure	Unsatisfied	Very Unsatisfied
1	2	3	4	5

27. How satisfied are you with the Town's garbage collection system?

Very Satisfied	Satisfied	Not Sure	Unsatisfied	Very Unsatisfied
1	2	3	4	5

28. How satisfied are you with the Town's fire protection?

Very Satisfied    Satisfied    Not Sure    Unsatisfied    Very Unsatisfied  
1                      2                      3                      4                      5

29. How satisfied are you with the Town's police protection?

Very Satisfied    Satisfied    Not Sure    Unsatisfied    Very Unsatisfied  
1                      2                      3                      4                      5

30. How satisfied are you with the Town's management and administration?

Very Satisfied    Satisfied    Not Sure    Unsatisfied    Very Unsatisfied  
1                      2                      3                      4                      5

31. How satisfied are you with the Town's public buildings? (Town Hall, Community Building, Library)?

Very Satisfied    Satisfied    Not Sure    Unsatisfied    Very Unsatisfied  
1                      2                      3                      4                      5

32. How satisfied are you with the Town's lifeguard service?

Very Satisfied    Satisfied    Not Sure    Unsatisfied    Very Unsatisfied  
1                      2                      3                      4                      5

33.a. Which of the following services would you be willing to pay to see improved? (Please check all that apply.)

\_\_\_\_\_ Streets                      \_\_\_\_\_ Recreation                      \_\_\_\_\_ Marina  
\_\_\_\_\_ Fire Protection                      \_\_\_\_\_ Police Protection  
\_\_\_\_\_ Water and Sewer                      \_\_\_\_\_ Drainage  
\_\_\_\_\_ Other (please specify) \_\_\_\_\_

33.b. If the services listed above are to be fully improved in the next five years, the Town must use one of the following methods of financing the improvements. Which method of financing would you prefer the Town to use?

\_\_\_\_\_ Tax increase                      \_\_\_\_\_ Issue Bonds  
\_\_\_\_\_ Assess affected property owners  
\_\_\_\_\_ A combination of the first three methods  
\_\_\_\_\_ None of the above: I am not interested in seeing these services improved.  
\_\_\_\_\_ Other (please specify) \_\_\_\_\_

## ABOUT ZONING AND LAND DEVELOPMENT

The Town of Carolina Beach has recently been updating its Zoning Ordinance and other development regulations. Your answers to these questions will help us continue this updating process.

34. Last year the Town Council decreased the number of multifamily units that could be built on one lot from six to four. Which of the following statements best describes how you feel about the number of units which can now be built on one lot? (please check one):

  1   I feel it is now too low  
  2   I feel it is about right  
  3   I feel it is still too high  
  4   I'm not sure

35. The proposed Convention Center will attract more hotels to the Boardwalk area. There will be increased pressure to convert the Boardwalk to hotel or other tourist uses (restaurants, gift shops, etc.). Which of the following statements best describes how you feel about this situation? (please check one):

  1   I would like to see the Boardwalk preserved.  
  2   I would like to see the Boardwalk preserved only if it is made more attractive for families.  
  3   I would like to see the Boardwalk converted to other uses.  
  4   I don't know.  
  5   Other \_\_\_\_\_

36. Because the Town of Carolina Beach is a resort area, housing costs are increasing rapidly. Which, if any, of the following solutions do you favor to reduce housing costs for year-round residents? (please check one):

  1   Give incentives for developers to build moderate cost housing.  
  2   Allow more mobile homes.  
  3   Allow planned multifamily development in existing single family areas.  
  4   Other (please specify) \_\_\_\_\_

37. Mobile homes have been allowed in Carolina Beach for a number of years. Which of the following statements best describes your feelings toward mobile homes in Carolina Beach? (please check one):

- 1 They should not be allowed at all.
- 2 They should be allowed only in areas currently zoned for mobile homes.
- 3 The areas in which they are now allowed should be reduced.
- 4 The areas in which they are now allowed should be increased.
- 5 I'm not sure.
- 6 Other (please specify) \_\_\_\_\_

#### ABOUT GROWTH MANAGEMENT

The Town of Carolina Beach has experienced tremendous growth lately. Your answers to the following questions will help us better manage this growth.

38. At what pace would you like to see the Town of Carolina Beach continue to grow? (please check one)

- 1 Faster than it is currently growing.
- 2 About the same as it is currently growing.
- 3 Somewhat slower than it is currently growing.
- 4 Much slower than it is currently growing.
- 5 I'm not sure.

39. How do you feel about the amount of land being consumed for residential and commercial uses? (please check one)

- 1 I would like to see more residential and less commercial uses? (please check one)
- 2 I would like to see more commercial and less residential uses.
- 3 I think the proportion of commercial and residential uses is about right.
- 4 I'm not sure.

40. If existing facilities must be expanded to accommodate growth, who should pay for these expansions? (please check one)

- ☒ 1 Local government
- ☒ 2 Developers of new projects
- ☒ 3 Local government in combination with developers of projects
- ☒ 4 I'm not sure
- ☒ 5 Other (please specify) \_\_\_\_\_
- \_\_\_\_\_

ABOUT YOU AND CAROLINA BEACH

The following questions will help us to tabulate the results of this survey. Answers to these and all other survey questions will be strictly confidential.

41. Which of the following best describes your residential status in Carolina Beach? (please check one)

- ☐ Permanent resident
- ☐ Non-resident property owner
- ☐ Other (please specify): \_\_\_\_\_
- \_\_\_\_\_

42. Are you registered to vote in New Hanover County?

Yes No

43. Where do you stay or reside in Carolina Beach? (please check one)

- ☐ East of U.S. 421
- ☐ West of U.S. 421

44. What type of residence do you stay in while in Carolina Beach?

- ☐ Single Family House
- ☐ Duplex
- ☐ Condominium or Townhouse
- ☐ Mobile Home
- ☐ Other (please specify): \_\_\_\_\_
- \_\_\_\_\_

45. How old are you? (please write in the blank) \_\_\_\_\_

46. What is your sex? (please circle one) M F

47. Which of the following best describes your occupation? (please check one)

\_\_\_\_\_ Professional/Technical

\_\_\_\_\_ Unskilled laborer

\_\_\_\_\_ Manager/Proprietor

\_\_\_\_\_ Housewife/husband

\_\_\_\_\_ Clerical/Sales

\_\_\_\_\_ Student

\_\_\_\_\_ Crafts

\_\_\_\_\_ Retired

\_\_\_\_\_ Skilled laborer

\_\_\_\_\_ Other (please specify)  
\_\_\_\_\_

48. How many years of schooling do you have? (please write in the blank):  
\_\_\_\_\_

49. Please use the blank area below, and the back of this page, to make any comments or suggestions you might have. Three things we are particularly interested in are:

- (a) What do you like best about Carolina Beach?
- (b) What do you like least about Carolina Beach?
- (c) What suggestions do you have for improving Town services?

We hope that you have found this survey to be interesting and enjoyable. Please return it in the enclosed stamped, self-addressed envelope. Thank you very much for your help.

TABLE A-1  
Land Use Survey  
Residents

	0	1	2	3	4	5	6
q1	2.3%	42.9%	42.5%	3.7%	6.3%	2.4%	0.0%
q2	0.7%	67.4%	26.1%	2.4%	2.4%	0.9%	0.0%
q3	0.7%	70.9%	22.1%	3.0%	2.1%	1.2%	0.0%
q4	0.9%	46.2%	35.2%	10.8%	5.6%	1.4%	0.0%
q5	0.3%	46.7%	33.1%	9.6%	6.9%	1.4%	0.0%
q6	0.9%	26.3%	31.7%	15.0%	21.6%	4.5%	0.0%
q7	1.2%	29.3%	43.6%	8.7%	15.2%	2.1%	0.0%
q8	1.7%	32.6%	30.0%	10.5%	20.9%	4.4%	0.0%
q10a	2.1%	43.9%	41.3%	12.6%	0.2%	0.0%	0.0%
q10b	1.9%	58.0%	27.0%	12.9%	0.2%	0.0%	0.0%
q11	3.0%	29.6%	39.0%	28.2%	0.2%	0.0%	0.0%
q12	3.3%	21.6%	56.4%	18.6%	0.0%	0.0%	0.0%
q13	3.3%	59.2%	24.2%	13.2%	0.0%	0.0%	0.0%
q14	1.9%	67.2%	21.8%	9.1%	0.0%	0.0%	0.0%
q15	1.0%	81.7%	14.1%	3.1%	0.0%	0.0%	0.0%
q16	0.9%	56.6%	33.1%	9.4%	0.0%	0.0%	0.0%
q18	5.9%	16.0%	35.2%	27.5%	8.7%	6.6%	0.0%
q19a	0.5%	89.7%	9.8%	0.0%	0.0%	0.0%	0.0%
q19b	10.8%	64.8%	24.4%	0.0%	0.0%	0.0%	0.0%
q19c	15.0%	61.7%	23.3%	0.0%	0.0%	0.0%	0.0%
q20	23.9%	42.2%	19.2%	14.8%	0.0%	0.0%	0.0%
q21	3.3%	60.5%	29.1%	7.1%	0.0%	0.0%	0.0%
q22	1.2%	0.7%	7.3%	2.6%	38.2%	50.0%	0.0%
q23	1.4%	10.5%	63.2%	6.8%	11.3%	6.8%	0.0%
q24	1.7%	1.0%	12.5%	12.2%	36.4%	36.1%	0.0%
q25	2.3%	3.0%	33.4%	18.5%	34.7%	8.2%	0.0%
q26	3.0%	0.9%	14.6%	19.7%	37.5%	24.4%	0.0%
q27	2.4%	12.0%	54.5%	5.9%	17.1%	8.0%	0.0%
q28	2.3%	17.6%	52.1%	18.5%	8.0%	1.6%	0.0%
q29	1.9%	15.3%	55.7%	12.4%	10.5%	4.2%	0.0%
q30	2.6%	11.5%	39.4%	24.2%	16.9%	5.4%	0.0%
q31	2.8%	5.4%	47.0%	12.4%	27.0%	5.4%	0.0%
q32	2.3%	13.1%	57.0%	20.4%	5.6%	1.7%	0.0%
q34	3.8%	7.3%	44.8%	33.8%	10.3%	0.0%	0.0%
q35	3.3%	8.4%	60.9%	23.2%	1.0%	3.1%	0.0%
q36	19.2%	49.8%	5.6%	14.8%	10.6%	0.0%	0.0%
q37	2.4%	22.5%	46.2%	8.0%	14.1%	5.1%	1.7%
q38	1.6%	5.2%	31.7%	33.3%	26.0%	2.3%	0.0%
q39	3.7%	22.8%	10.1%	49.5%	13.9%	0.0%	0.0%
q40	1.4%	4.2%	53.5%	36.9%	3.7%	0.3%	0.0%



TABLE A-2  
Land Use Survey  
Residents Over 64

	0	1	2	3	4	5	6
q1	5.3%	46.0%	42.5%	1.8%	3.5%	0.9%	0.0%
q2	2.7%	61.1%	31.9%	1.8%	2.7%	0.0%	0.0%
q3	0.0%	75.2%	19.5%	2.7%	1.8%	0.9%	0.0%
q4	2.7%	40.7%	36.3%	13.3%	5.3%	1.8%	0.0%
q5	0.9%	40.7%	42.5%	11.5%	4.4%	0.0%	0.0%
q6	2.7%	29.2%	31.9%	19.5%	15.0%	1.8%	0.0%
q7	4.4%	37.2%	40.7%	8.8%	8.8%	0.0%	0.0%
q8	2.7%	39.8%	30.1%	11.5%	15.0%	0.9%	0.0%
q10a	2.7%	31.0%	44.2%	22.1%	0.0%	0.0%	0.0%
q10b	3.5%	54.0%	20.4%	22.1%	0.0%	0.0%	0.0%
q11	6.2%	27.4%	29.2%	37.2%	0.0%	0.0%	0.0%
q12	6.2%	25.7%	35.4%	32.7%	0.0%	0.0%	0.0%
q13	7.1%	45.1%	30.1%	17.7%	0.0%	0.0%	0.0%
q14	4.4%	69.9%	16.8%	8.8%	0.0%	0.0%	0.0%
q15	1.8%	85.0%	9.7%	3.5%	0.0%	0.0%	0.0%
q16	3.5%	65.5%	23.0%	8.0%	0.0%	0.0%	0.0%
q18	4.4%	8.8%	32.7%	35.4%	14.2%	4.4%	0.0%
q19a	0.9%	87.6%	11.5%	0.0%	0.0%	0.0%	0.0%
q19b	11.5%	64.6%	23.9%	0.0%	0.0%	0.0%	0.0%
q19c	17.7%	64.6%	17.7%	0.0%	0.0%	0.0%	0.0%
q20	21.2%	48.7%	15.9%	14.2%	0.0%	0.0%	0.0%
q21	3.5%	53.1%	34.5%	8.8%	0.0%	0.0%	0.0%
q22	0.9%	0.9%	8.8%	3.5%	45.1%	40.7%	0.0%
q23	3.5%	12.4%	66.4%	8.0%	6.2%	3.5%	0.0%
q24	0.9%	2.7%	9.7%	15.0%	39.8%	31.9%	0.0%
q25	5.3%	3.5%	48.7%	22.1%	19.5%	0.9%	0.0%
q26	4.4%	0.9%	21.2%	23.9%	34.5%	15.0%	0.0%
q27	4.4%	16.8%	55.8%	7.1%	12.4%	3.5%	0.0%
q28	5.3%	17.7%	56.6%	10.6%	8.8%	0.9%	0.0%
q29	3.5%	17.7%	61.9%	11.5%	3.5%	1.8%	0.0%
q30	4.4%	13.3%	44.2%	22.1%	13.3%	2.7%	0.0%
q31	5.3%	5.3%	57.5%	8.0%	20.4%	3.5%	0.0%
q32	4.4%	17.7%	57.5%	20.4%	0.0%	0.0%	0.0%
q34	8.0%	5.3%	34.5%	38.9%	13.3%	0.0%	0.0%
q35	8.0%	12.4%	60.2%	15.9%	0.9%	2.7%	0.0%
q36	15.0%	61.1%	4.4%	11.5%	8.0%	0.0%	0.0%
q37	2.7%	17.7%	54.0%	5.3%	13.3%	6.2%	0.9%
q38	2.7%	0.9%	15.0%	44.2%	31.9%	5.3%	0.0%
q39	5.3%	30.1%	4.4%	42.5%	17.7%	0.0%	0.0%
q40	2.7%	1.8%	67.3%	24.8%	3.5%	0.0%	0.0%

TABLE A-3  
Land Use Survey  
Residents Under 65

	0	1	2	3	4	5	6
q1	1.5%	42.1%	42.5%	4.1%	6.8%	2.8%	0.0%
q2	0.2%	69.0%	24.7%	2.6%	2.4%	1.1%	0.0%
q3	0.9%	69.8%	22.8%	3.0%	2.2%	1.3%	0.0%
q4	0.4%	47.5%	34.9%	10.2%	5.6%	1.3%	0.0%
q5	0.2%	48.2%	30.8%	9.1%	10.0%	1.7%	0.0%
q6	0.4%	25.6%	31.7%	13.9%	23.2%	5.2%	0.0%
q7	0.4%	27.3%	44.3%	8.7%	16.7%	2.6%	0.0%
q8	1.5%	30.8%	29.9%	10.2%	22.3%	5.2%	0.0%
q10a	2.0%	47.1%	40.5%	10.2%	0.2%	0.0%	0.0%
q10b	1.5%	59.0%	28.6%	10.6%	0.2%	0.0%	0.0%
q11	2.2%	30.2%	41.4%	26.0%	0.2%	0.0%	0.0%
q12	2.6%	20.6%	61.6%	15.2%	0.0%	0.0%	0.0%
q13	2.4%	62.7%	22.8%	12.1%	0.0%	0.0%	0.0%
q14	1.3%	66.6%	23.0%	9.1%	0.0%	0.0%	0.0%
q15	0.8%	80.9%	15.2%	3.0%	0.0%	0.0%	0.0%
q16	0.2%	54.4%	35.6%	9.8%	0.0%	0.0%	0.0%
q18	6.3%	17.8%	35.8%	25.6%	7.4%	7.2%	0.0%
q19a	0.4%	90.2%	9.3%	0.0%	0.0%	0.0%	0.0%
q19b	10.6%	64.9%	24.5%	0.0%	0.0%	0.0%	0.0%
q19c	14.3%	61.0%	24.7%	0.0%	0.0%	0.0%	0.0%
q20	24.5%	40.6%	20.0%	15.0%	0.0%	0.0%	0.0%
q21	3.3%	62.3%	27.8%	6.7%	0.0%	0.0%	0.0%
q22	1.3%	0.7%	6.8%	2.4%	36.4%	52.3%	0.0%
q23	0.9%	10.0%	62.5%	6.5%	12.6%	7.6%	0.0%
q24	2.0%	0.7%	13.2%	11.5%	35.6%	37.1%	0.0%
q25	1.5%	2.8%	29.7%	17.6%	38.4%	10.0%	0.0%
q26	2.6%	0.9%	13.0%	18.7%	38.2%	26.7%	0.0%
q27	2.0%	10.8%	54.2%	5.6%	18.2%	9.1%	0.0%
q28	1.5%	17.6%	31.0%	20.4%	7.8%	1.7%	0.0%
q29	1.5%	14.8%	54.2%	12.6%	12.1%	4.8%	0.0%
q30	2.2%	11.1%	38.2%	24.7%	17.8%	6.1%	0.0%
q31	2.2%	5.4%	44.5%	13.4%	28.6%	5.8%	0.0%
q32	1.7%	11.9%	56.8%	20.4%	6.9%	2.2%	0.0%
q34	2.8%	7.8%	47.3%	32.5%	9.5%	0.0%	0.0%
q35	2.2%	7.4%	61.1%	25.0%	1.1%	3.3%	0.0%
q36	20.2%	47.1%	5.9%	15.6%	11.3%	0.0%	0.0%
q37	2.4%	23.6%	44.3%	8.7%	14.3%	4.8%	2.0%
q38	1.3%	6.3%	35.8%	30.6%	24.5%	1.5%	0.0%
q39	3.3%	21.0%	11.5%	51.2%	13.0%	0.0%	0.0%
q40	1.1%	4.8%	50.1%	39.9%	3.7%	0.4%	0.0%

TABLE A-4  
Land Use Survey  
Non-Residents

	0	1	2	3	4	5	6
q1	2.3%	40.7%	46.8%	4.6%	5.0%	0.5%	0.0%
q2	1.4%	65.0%	27.7%	2.1%	2.9%	0.9%	0.0%
q3	1.8%	67.5%	20.5%	3.7%	2.1%	4.1%	0.0%
q4	1.8%	47.1%	31.8%	10.2%	4.8%	4.3%	0.0%
q5	0.9%	34.3%	37.5%	17.4%	8.7%	1.4%	0.0%
q6	1.4%	14.6%	29.3%	21.6%	23.7%	9.3%	0.0%
q7	0.7%	24.8%	42.5%	12.9%	17.0%	2.1%	0.0%
q8	0.7%	26.4%	25.5%	12.9%	25.0%	9.5%	0.0%
q10a	2.1%	40.1%	38.1%	19.5%	0.2%	0.0%	0.0%
q10b	2.3%	50.0%	29.5%	18.0%	0.2%	0.0%	0.0%
q11	3.4%	27.5%	27.1%	41.8%	0.2%	0.0%	0.0%
q12	3.2%	27.1%	33.2%	35.9%	0.4%	0.2%	0.0%
q13	3.0%	55.5%	26.6%	14.8%	0.0%	0.0%	0.0%
q14	1.8%	63.5%	26.8%	7.8%	0.0%	0.0%	0.0%
q15	0.5%	59.6%	27.0%	12.9%	0.0%	0.0%	0.0%
q16	1.1%	48.9%	37.3%	12.5%	0.0%	0.0%	0.2%
q18	7.3%	13.0%	37.9%	29.5%	7.3%	5.0%	0.0%
q19a	1.8%	23.7%	74.5%	0.0%	0.0%	0.0%	0.0%
q19b	75.0%	22.3%	2.7%	0.0%	0.0%	0.0%	0.0%
q19c	70.0%	28.2%	1.8%	0.0%	0.0%	0.0%	0.0%
q20	16.1%	75.7%	2.3%	5.9%	0.0%	0.0%	0.0%
q21	5.0%	52.7%	20.4%	22.0%	0.0%	0.0%	0.0%
q22	1.8%	1.2%	23.0%	6.8%	35.4%	31.8%	0.0%
q23	1.4%	11.1%	64.1%	7.3%	10.2%	5.9%	0.0%
q24	2.0%	2.1%	17.9%	24.5%	32.0%	21.6%	0.0%
q25	2.5%	3.7%	36.1%	35.0%	19.6%	3.0%	0.0%
q26	2.1%	4.1%	23.9%	27.0%	27.7%	15.2%	0.0%
q27	1.4%	4.8%	47.5%	13.6%	22.3%	10.4%	0.0%
q28	1.4%	11.3%	41.3%	38.6%	6.4%	0.9%	0.0%
q29	1.6%	20.9%	50.0%	21.8%	4.1%	1.6%	0.0%
q30	2.9%	11.6%	33.0%	39.3%	10.5%	2.7%	0.0%
q31	1.2%	5.4%	53.6%	30.7%	7.9%	1.2%	0.0%
q32	1.4%	8.4%	50.0%	33.7%	5.4%	1.1%	0.0%
q34	6.6%	11.8%	38.4%	32.7%	10.5%	0.0%	0.0%
q35	5.7%	10.0%	53.8%	26.7%	1.4%	2.3%	0.0%
q36	24.6%	39.5%	3.2%	23.2%	9.5%	0.0%	0.0%
q37	2.9%	34.1%	40.0%	10.7%	6.8%	3.6%	2.0%
q38	3.9%	9.3%	23.7%	32.3%	29.3%	1.4%	0.0%
q39	4.6%	22.3%	10.5%	48.6%	13.9%	0.0%	0.0%
q40	6.3%	6.8%	48.2%	34.1%	3.0%	1.6%	0.0%

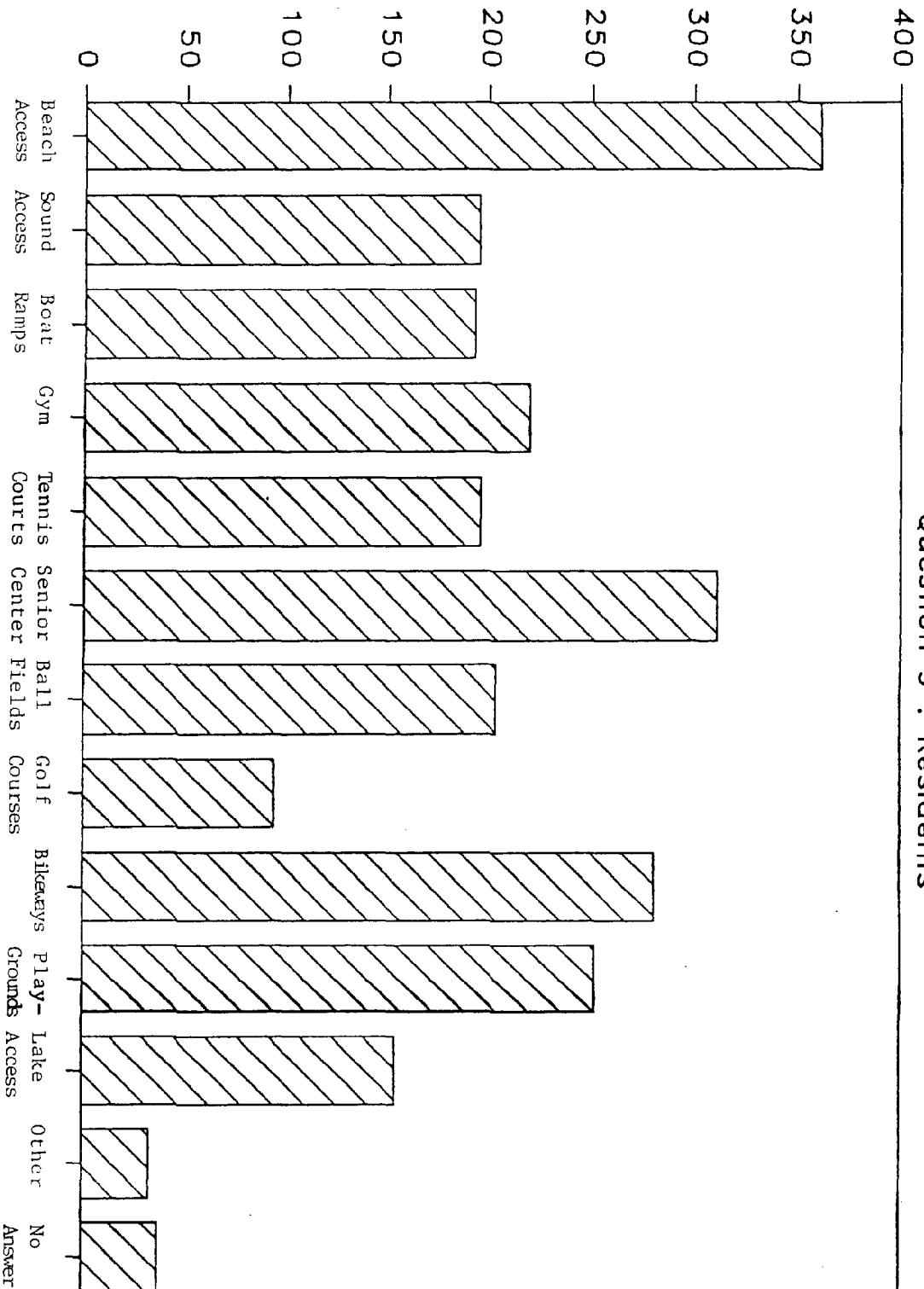
TABLE A-5  
Land Use Survey  
All Respondents

	0	1	2	3	4	5	6
q1	2.3%	41.8%	44.6%	4.1%	5.6%	1.5%	0.0%
q2	1.1%	66.2%	26.9%	2.3%	2.6%	0.9%	0.0%
q3	1.2%	69.2%	21.3%	3.4%	2.1%	2.7%	0.0%
q4	1.3%	46.6%	33.5%	10.5%	5.2%	2.8%	0.0%
q5	0.6%	40.6%	35.3%	13.3%	8.8%	1.4%	0.0%
q6	1.1%	20.5%	30.5%	18.3%	22.7%	6.9%	0.0%
q7	1.0%	27.1%	43.0%	10.8%	16.0%	2.1%	0.0%
q8	1.2%	29.5%	27.8%	11.6%	22.9%	6.9%	0.0%
q10a	2.1%	42.0%	39.7%	16.0%	0.2%	0.0%	0.0%
q10b	2.1%	54.1%	28.2%	15.4%	0.2%	0.0%	0.0%
q11	3.2%	28.6%	33.2%	34.9%	0.2%	0.0%	0.0%
q12	3.3%	24.3%	45.0%	27.2%	0.2%	0.1%	0.0%
q13	3.2%	57.4%	25.4%	14.0%	0.0%	0.0%	0.0%
q14	1.9%	65.4%	24.3%	8.5%	0.0%	0.0%	0.0%
q15	0.8%	70.8%	20.5%	7.9%	0.0%	0.0%	0.0%
q16	1.0%	52.8%	35.2%	10.9%	0.0%	0.0%	0.1%
q18	6.6%	14.6%	36.5%	28.5%	8.0%	5.8%	0.0%
q19a	1.1%	57.1%	41.7%	0.0%	0.0%	0.0%	0.0%
q19b	42.5%	43.6%	13.7%	0.0%	0.0%	0.0%	0.0%
q19c	42.2%	45.1%	12.7%	0.0%	0.0%	0.0%	0.0%
q20	20.0%	58.7%	10.8%	10.4%	0.0%	0.0%	0.0%
q21	4.1%	56.6%	24.8%	14.5%	0.0%	0.0%	0.0%
q22	1.5%	1.0%	15.1%	4.7%	36.8%	41.0%	0.0%
q23	1.4%	10.8%	63.7%	7.1%	10.8%	6.3%	0.0%
q24	1.9%	1.6%	15.2%	18.3%	34.2%	28.9%	0.0%
q25	2.4%	3.4%	34.7%	26.6%	27.2%	5.6%	0.0%
q26	2.6%	2.5%	19.2%	23.3%	32.6%	19.8%	0.0%
q27	1.9%	8.5%	51.1%	9.7%	19.7%	9.2%	0.0%
q28	1.9%	14.5%	46.8%	28.4%	7.2%	1.2%	0.0%
q29	1.8%	18.1%	52.9%	17.0%	7.3%	2.9%	0.0%
q30	2.7%	11.6%	36.2%	31.7%	13.8%	4.1%	0.0%
q31	2.0%	5.4%	50.3%	21.4%	17.5%	3.4%	0.0%
q32	1.9%	10.8%	53.5%	27.0%	5.5%	1.4%	0.0%
q34	5.2%	9.5%	41.6%	33.2%	10.4%	0.0%	0.0%
q35	4.5%	9.2%	57.4%	24.9%	1.2%	2.7%	0.0%
q36	21.9%	44.7%	4.4%	19.0%	10.1%	0.0%	0.0%
q37	2.6%	28.2%	43.1%	9.3%	10.5%	4.3%	1.9%
q38	2.7%	7.2%	27.8%	32.8%	27.6%	1.9%	0.0%
q39	4.1%	22.6%	10.3%	49.0%	13.9%	0.0%	0.0%
q40	3.8%	5.5%	50.9%	35.5%	3.4%	1.0%	0.0%

# Land Use Survey

FIGURE A-1

Question 9 : Residents



# Land Use Survey

Question 9 : Non-Residents

FIGURE A-2

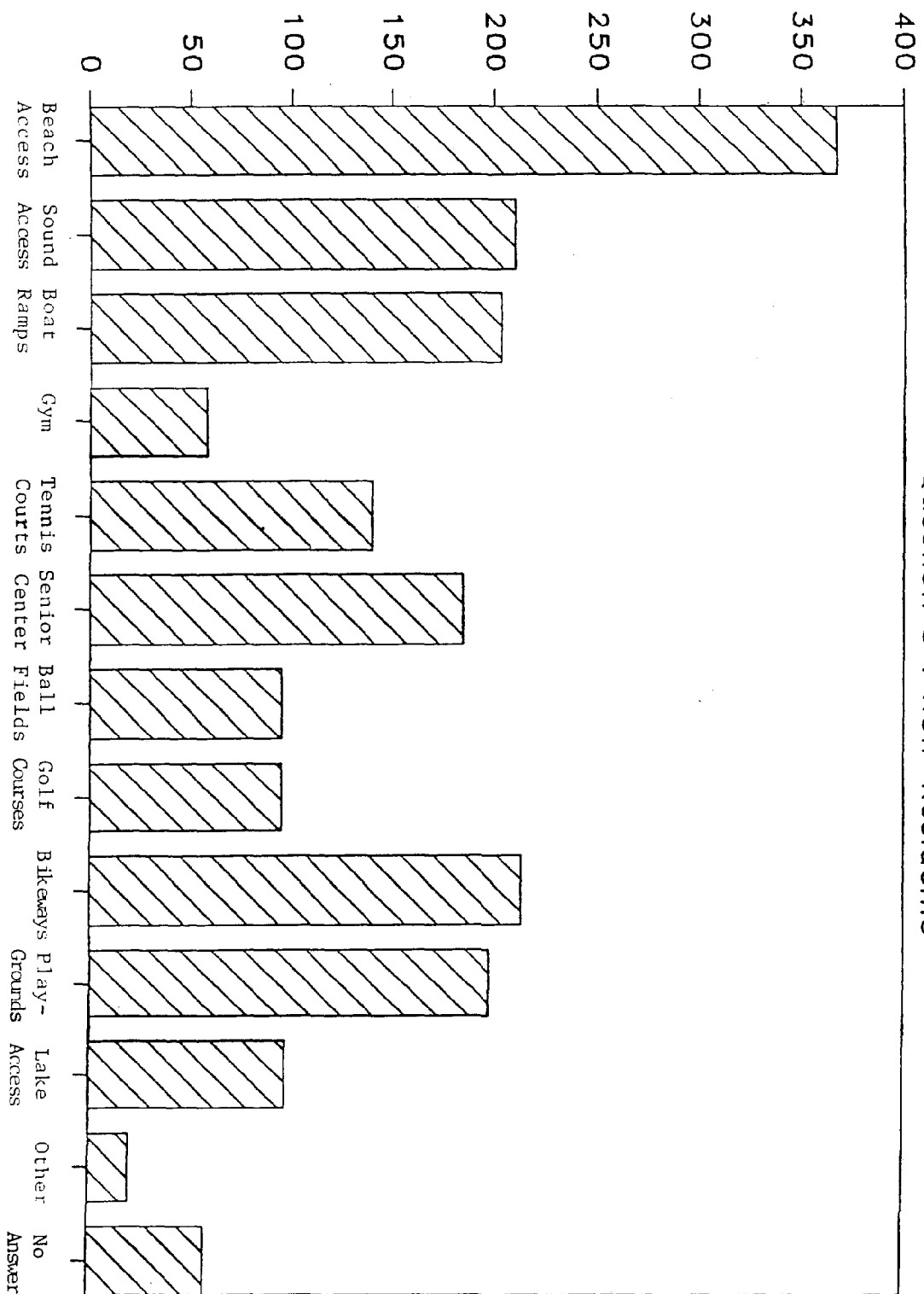
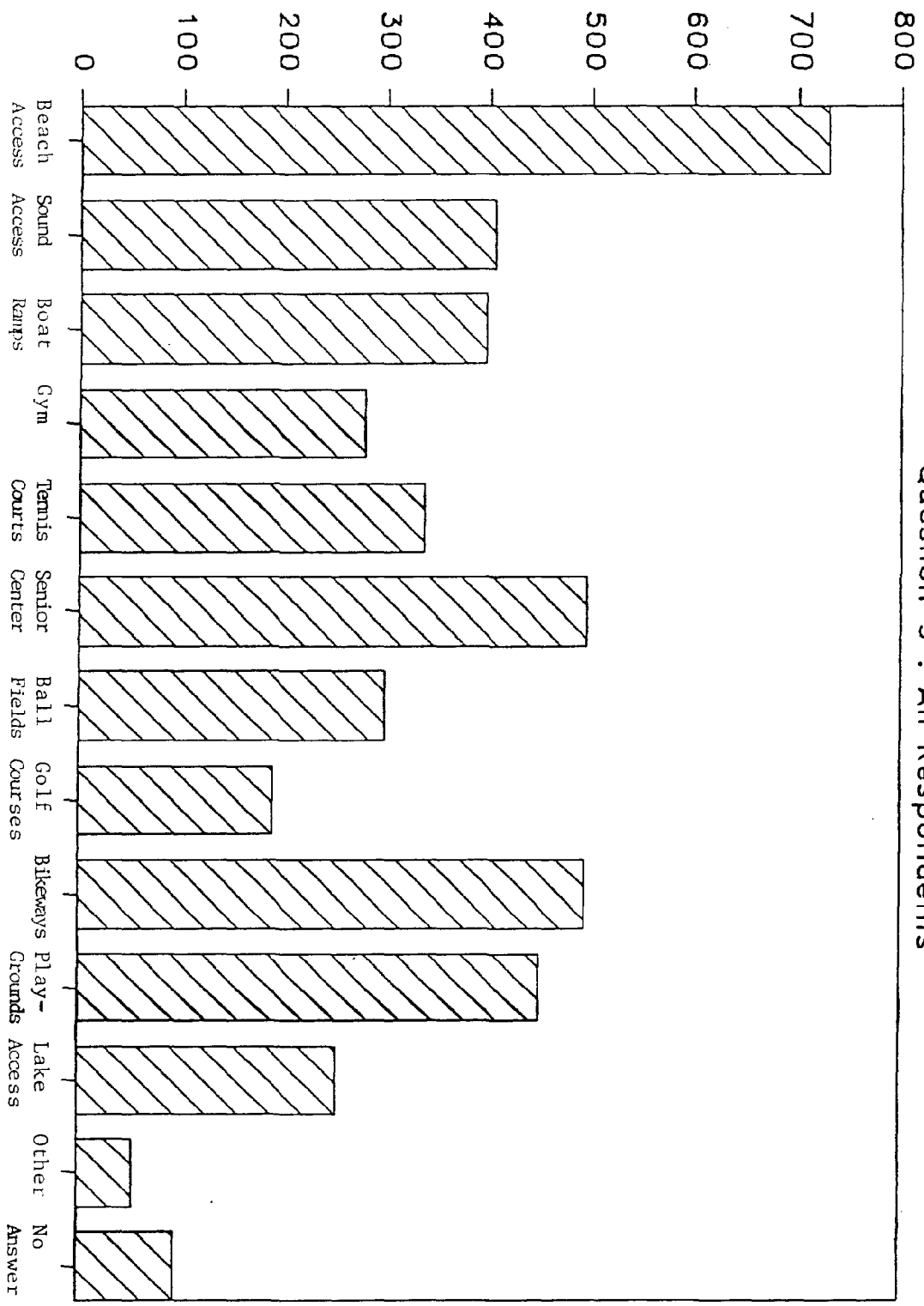
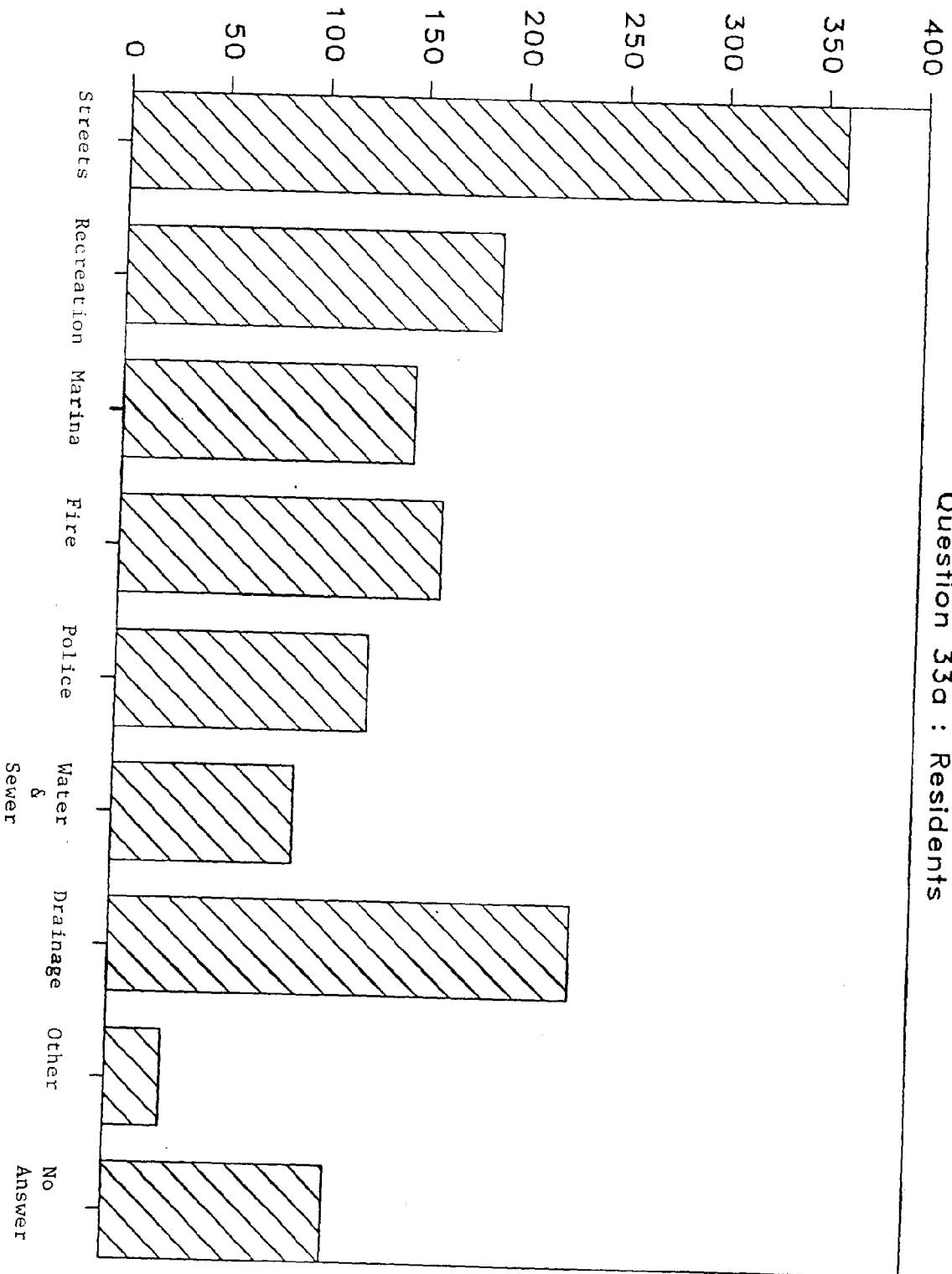


FIGURE A-3  
**Land Use Survey**  
 Question 9 : All Respondents



# Land Use Survey Question 33a : Residents

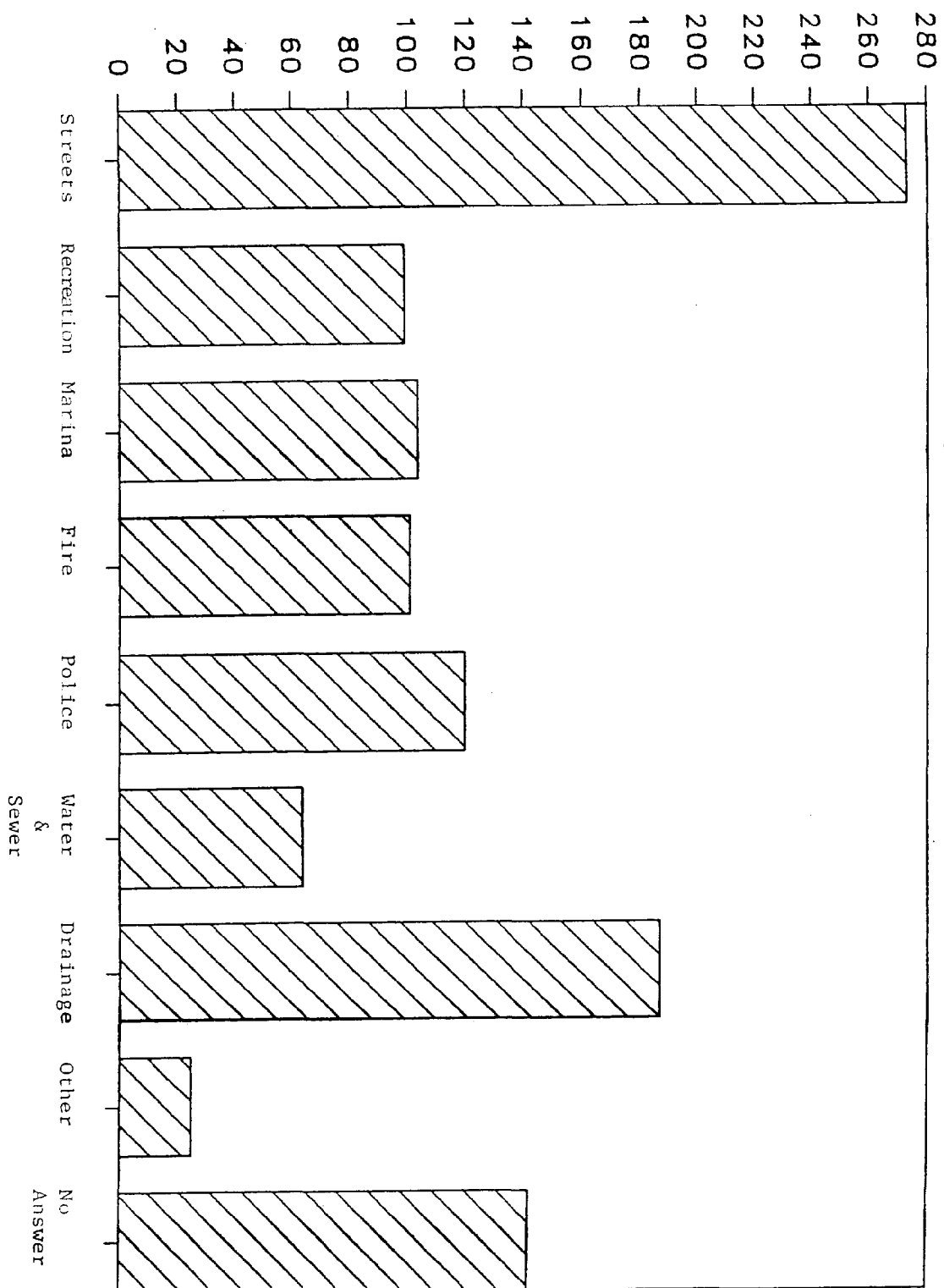
FIGURE A-4





# Land Use Survey Question 33a : Non - Residents

FIGURE A-5



# Land Use Survey Question 33a : All Respondents

FIGURE A-6

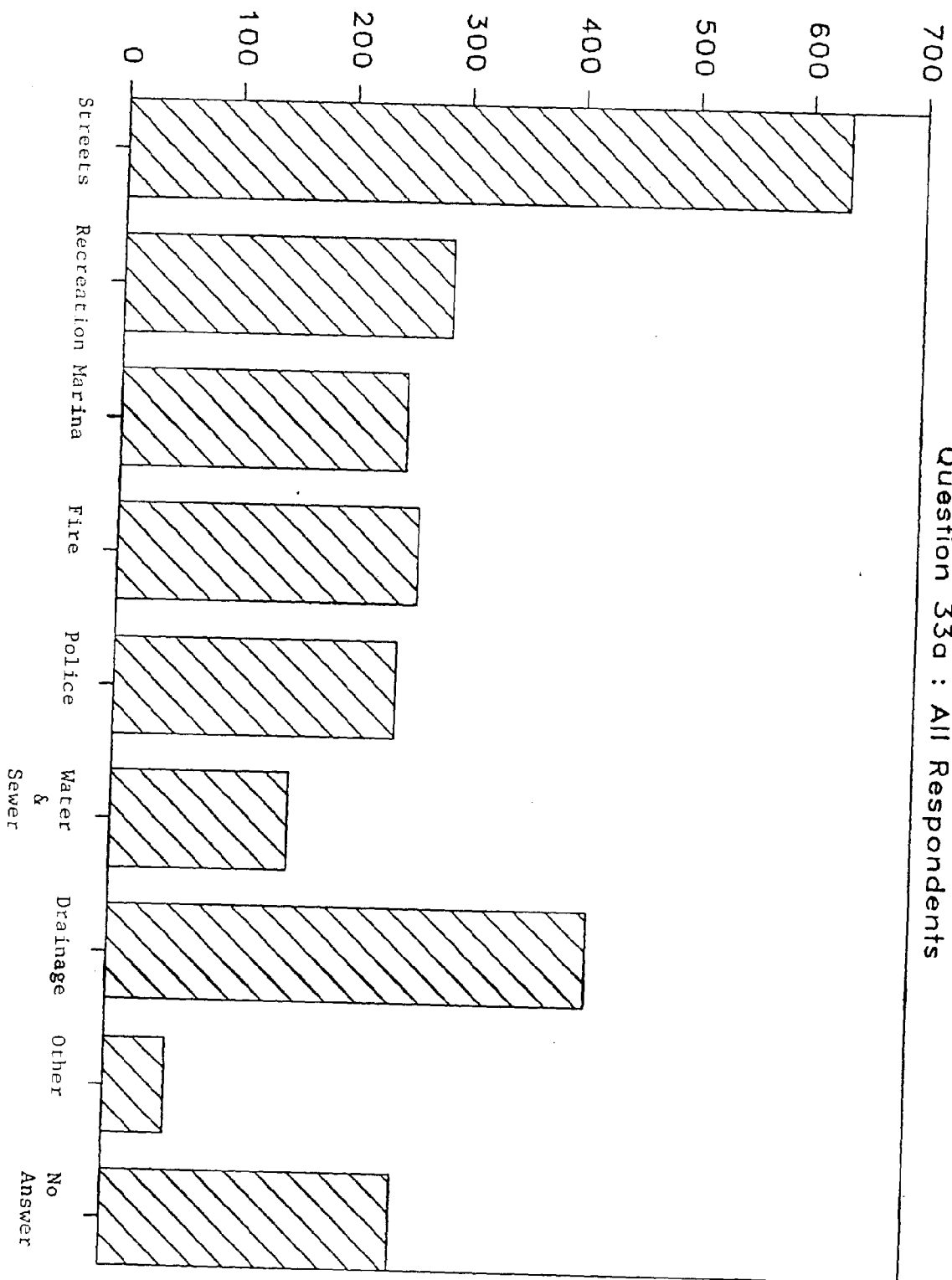


FIGURE A-7

# Land Use Survey

Question 33b : Residents

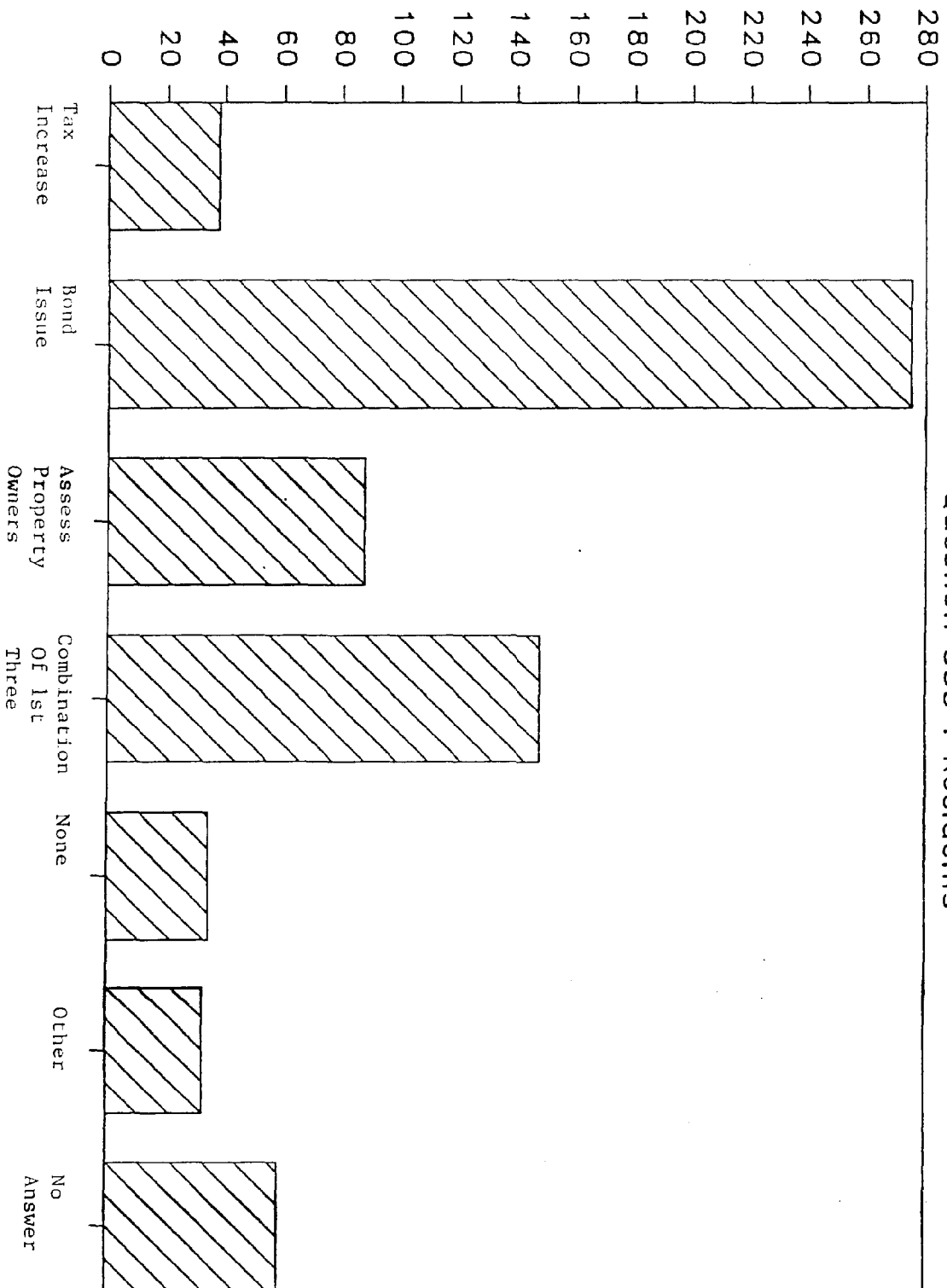


FIGURE A-8  
Land Use Survey  
Question 33b : Non-Residents

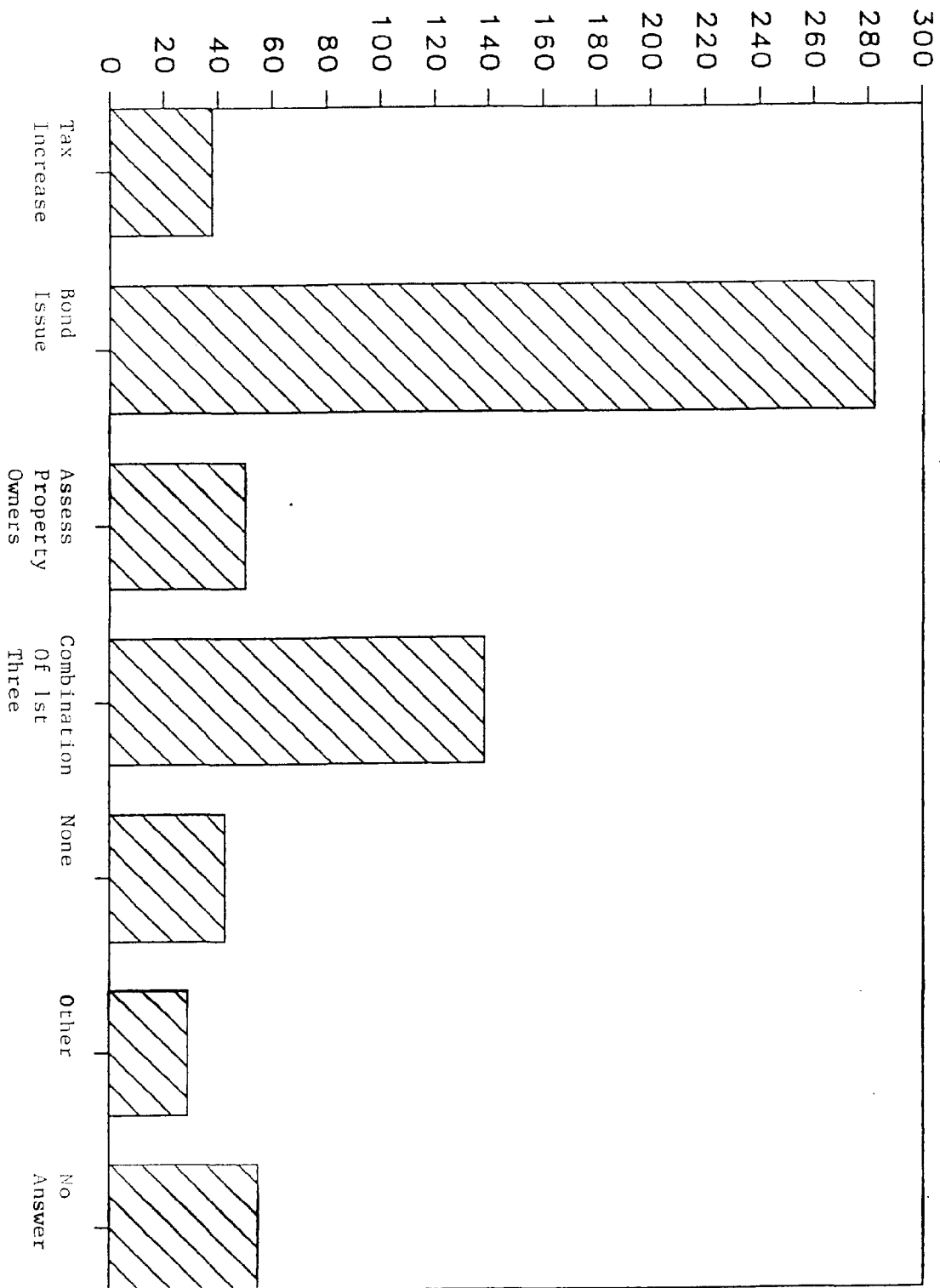
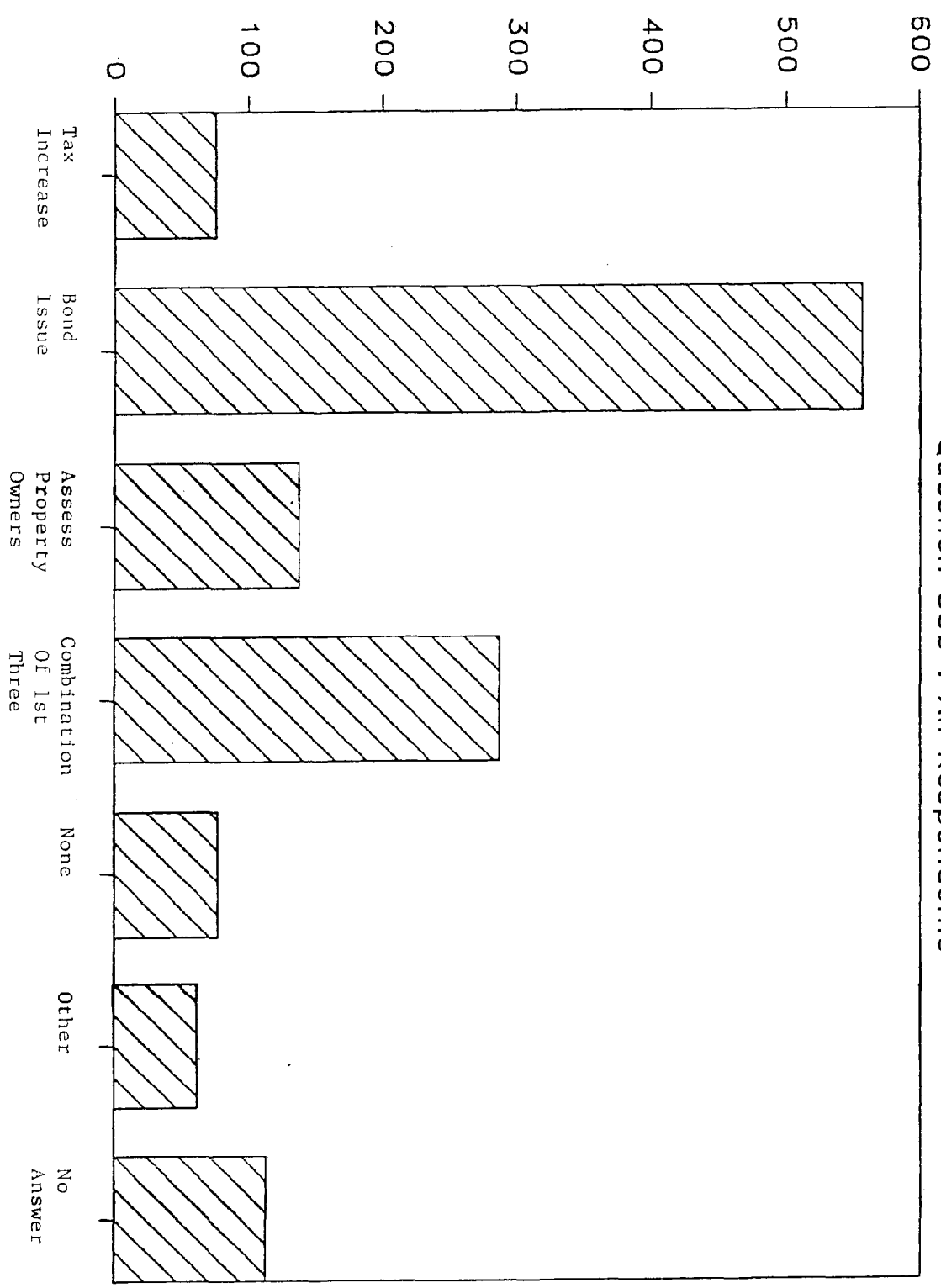


FIGURE A-9  
**Land Use Survey**  
 Question 33b : All Respondents



## APPENDIX 2 POPULATION AND DWELLING UNIT PROJECTIONS

The tremendous growth experienced by the Town of Carolina Beach since 1980 has invalidated the population and dwelling unit projections of previous Land Use Plans. This Appendix provides revised and updated projections which will hopefully serve as a more accurate predictive statement of future growth than those earlier projections.

For small areas such as the Town of Carolina Beach, local knowledge of zoning and construction trends often leads to the most accurate prediction of the extent of future populations (Guide for Local Area Population Projections: Technical Paper 39; Richard Irwin; U.S. Dept. of Commerce, Bureau of the Census; 1977; page 27). Given past development trends, along with assumptions which project the continuance of those trends, residential dwelling unit projections can be made from which year round and seasonal populations can also be projected. Consequently, discussion in this Appendix will begin with existing and projected residential dwelling units.

### EXISTING AND PROJECTED DWELLING UNITS

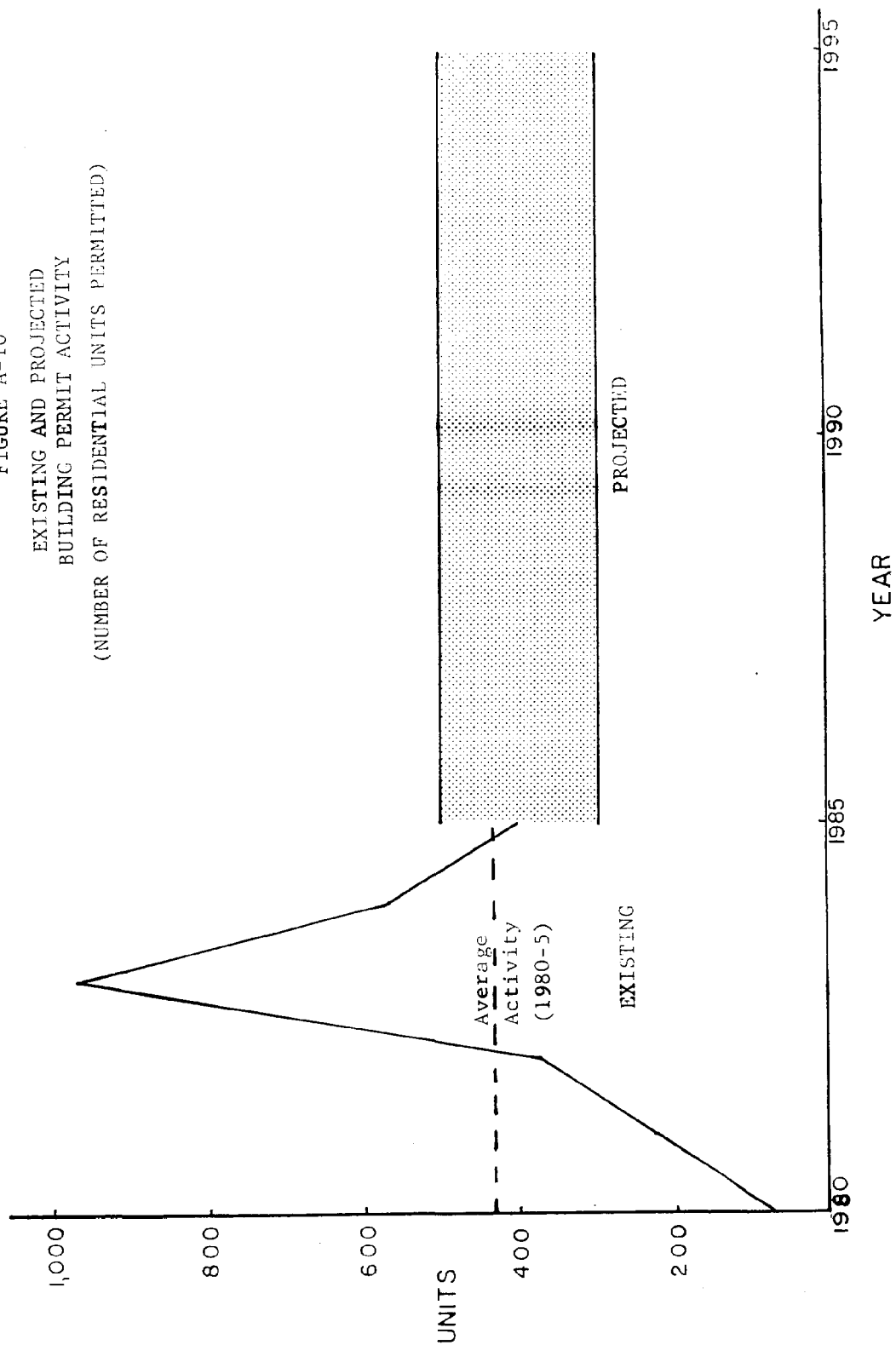
Table FLU-1 (pp. 67-68) indicates the existing number of residential dwelling units within the Town and its extraterritorial jurisdiction. Because it is the Town's intention to annex all unincorporated areas within its extraterritorial jurisdiction within the planning horizon of this 1985 Land Use Plan, no effort was made to separate existing dwelling units or dwelling unit projections by corporate status.

Over the past six years (1980-1985) local building permit issuance has reflected the rapid growth experienced by Carolina Beach. Table FLU-2 provides an annual breakdown of permit issuance by dwelling unit type. Figure A-10 below graphs the annual building permit activity over that period of time, with the dashed line indicating average building permit activity over that period.

Although there has been a considerable decline in permit activity since the peak of 968 units in 1983, much of that decline can be traced to both locally and nationally anomalous conditions. Local builders are still selling and/or completing projects which received permits in previous years; the efforts of these builders has been complicated by recent financial uncertainties at the national level involving proposed and adopted changes to Federal tax laws. The projections contained in this Appendix assume that these anomalous conditions will stabilize in near term.

Still, because uncertainty exists in the sometimes volatile housing industry, all dwelling unit projections in this Appendix and, hence, all population projections will be

FIGURE A-10  
 EXISTING AND PROJECTED  
 BUILDING PERMIT ACTIVITY  
 (NUMBER OF RESIDENTIAL UNITS PERMITTED)



expressed in a range. The shaded area in Figure A-10 indicates the projected range of dwelling unit construction over the next few years. This range assumes that the average level of building permit activity over the past six years will likely continue, given pro-development attitudes and conditions in Carolina Beach, along with the widespread growth now occurring throughout New Hanover County which will be further fueled by the inevitable construction of I-40, the County's link to the Interstate Highway System.

The range of residential building permit activity illustrated in Figure A-10 indicates that annual dwelling unit increase in Carolina Beach will be between 300 and 500 residential dwelling units. Table A-6 provides annual dwelling unit projections from the existing number of units given the above assumption. The actual number of dwelling units will likely fall somewhere between the low and the high projections.

TABLE A-6  
ANNUAL DWELLING UNIT PROJECTIONS

YEAR	<u>TOTAL NUMBER OF HOUSING UNITS</u>	
	<u>LOW PROJECTION</u> <u>(300 units/year)</u>	<u>HIGH PROJECTION</u> <u>(500 units/year)</u>
1985 (existing)	4448	4448
1986	4748	4948
1987	5048	5448
1988	5348	5948
1989	5648	6448
1990	5948	6948
1991	6248	7448
1992	6548	7948
1993	6848	8448
1994	7148	8948
1995	7448	9448

#### EXISTING AND PROJECTED POPULATION

Population estimates for the Town will be based upon the dwelling unit estimates discussed above. Consequently, all population projections will be expressed in a range, with the actual Town population likely falling somewhere between the high and low values. The following assumptions are used in translating dwelling unit counts into population estimates.

#### Assumptions

There are three primary population groups within Carolina Beach. Year-round, or permanent, residents comprise one group. The Town also contains a large seasonal population during the



summer months and during the fishing seasons. The assumptions from which the first two population groups are estimated are provided below. The third group consists of persons visiting Carolina Beach on a daily basis (day visitors). Day visitor population estimates are approximately 5,000 persons per day (1983 Growth Assessment Report).

- (1) For single family residential units on the Northern Extension and east of U.S. 421 south of Harper Avenue (the primary tourist area), the permanent population occupancy rate is estimated at 50%; average seasonal occupancy is estimated at 75% for the remaining number of units of this type.
- (2) For other single family residential units, the permanent population occupancy rate is estimated at 75%, with the average seasonal occupancy estimated at 75% for the remaining number of units of this type.
- (3) For duplex units, the permanent population occupancy rate is estimated at 40%, with the average seasonal occupancy estimated at 75% for the remaining number of units of this type.
- (4) For mobile homes, the permanent population occupancy rate is estimated at 40%, with the average seasonal occupancy estimated at 75% for the remaining number of units of this type.
- (5) For multifamily units, the permanent population occupancy rate is estimated at 25%, with the average seasonal occupancy estimated at 75% for the remaining number of units of this type.
- (6) For hotel/motel units, the permanent population occupancy rate is estimated at 0%, with the average seasonal occupancy estimated at 75% for the remaining number of units of this type.

Population per dwelling unit is assumed to be 2.5 persons for the permanent population group and 3.5 persons for the seasonal population group.

### Existing Population Estimates

The following population estimates are made for the existing permanent and seasonal populations based on unit type.

TABLE A-7  
PERMANENT POPULATION (EXISTING)

<u>HOUSING TYPE</u> <u>(from above)</u>	<u>NUMBER OF</u> <u>UNITS</u>	<u>OCCUPANCY</u> <u>RATE</u>	<u>PERSONS PER</u> <u>HOUSEHOLD</u>	<u>TOTAL</u> <u>POPULATION</u>
(1)	307	50%	2.5	384
(2)	792	75%	2.5	1,485
(3)	330	40%	2.5	330
(4)	289	40%	2.5	289
(5)	2,056	25%	2.5	1,285
(6)	674	0	2.5	0
TOTAL EXISTING PERMANENT POPULATION				3,773

TABLE A-8: AVERAGE SEASONAL POPULATION (EXISTING)

<u>UNIT TYPE</u> <u>(from above)</u>	<u>NUMBER OF</u> <u>UNITS</u>	<u>OCCUPANCY</u> <u>RATE</u>	<u>PERSONS PER</u> <u>HOUSEHOLD</u>	<u>TOTAL</u> <u>POPULATION</u>
(1)	154	75%	3.5	404
(2)	198	75%	3.5	520
(3)	198	75%	3.5	520
(4)	173	75%	3.5	454
(5)	1542	75%	3.5	4,048
(6)	674	75%	3.5	1,769
TOTAL EXISTING AVERAGE SEASONAL POPULATION				7,715

### Projected Population

Rapid growth in Carolina Beach has altered the previous mix of dwelling unit types. For instance, in 1980, single family structures were the predominant dwelling unit type, while, in 1985, multifamily structures are the predominant dwelling unit type.

Certain trends concerning the future mix of dwelling unit types can be derived or inferred from the Future Land Use Element of this Land Use Plan. First, multifamily construction will likely continue its increase as the predominant dwelling unit

type in Carolina Beach. Single family uses in tourist areas will continue to be converted to multifamily uses. It can be assumed, however, that non-tourist area single family construction will continue its current share of the total housing stock due to anticipated construction in two relatively new subdivisions (Carolina Sands and Pleasure Cay), along with infill in existing single family areas in the Town. Mobile homes will most likely make up a smaller percentage of the overall housing mix due to proposed land use changes which will encourage conversion from mobile home uses to other uses in several areas of Carolina Beach. Duplexes will also be on the decline (as a percentage of the total housing mix) due to recent rezoning proposals and actions by the Town which will eliminate duplex uses from certain areas. Finally, hotel/motel uses can be expected to increase (as a percentage of the total housing mix) due to the influence of the Tourist (T-1) Zoning District.

Consequently, for the purpose of projecting annual population increases for the Town of Carolina Beach, this section will assume that the following total housing mix percentages will hold for the six housing types considered in this Appendix for each year.

TABLE A-9: HOUSING MIX PROJECTIONS  
(Numbers provided are percentages of total housing stock)

HOUSING TYPE (from above)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
(1)	7	7	6	6	5	5	4	4	3	3	3
(2)	18	18	18	18	18	18	18	18	18	18	18
(3)	7	7	7	6	6	6	5	5	5	4	4
(4)	6	6	5	5	4	4	4	3	3	3	3
(5)	46	47	48	48	49	50	50	51	52	53	53
(6)	15	15	16	16	17	17	18	18	19	19	20

Given the housing mix percentages contained in Table A-9, and given the dwelling unit projections and population estimation assumptions provided in previous sections of this Appendix, the following permanent and seasonal population projections have been generated. Note that high and low population projections have been provided, in keeping with the range of future dwelling units projected in an earlier section.

TABLE A-10  
POPULATION PROJECTION RANGES  
PERMANENT AND SEASONAL POPULATIONS

<u>YEAR</u>	<u>PERMANENT POPULATION</u>			<u>SEASONAL POPULATION</u>			<u>TOTAL POPULATION</u>		
	<u>LOW</u>	-	<u>HIGH</u>	<u>LOW</u>	-	<u>HIGH</u>	<u>LOW</u>	-	<u>HIGH</u>
1986	3,999	-	4,199	8,232	-	8,579	12,231	-	12,778
1987	4,202	-	4,535	8,839	-	9,539	13,041	-	14,074
1988	4,397	-	4,891	9,279	-	10,319	13,676	-	15,210
1989	4,554	-	5,199	9,997	-	11,413	14,551	-	16,612
1990	4,833	-	5,646	10,539	-	12,310	15,372	-	17,956
1991	4,935	-	5,883	11,054	-	13,177	15,989	-	19,060
1992	5,147	-	6,248	11,611	-	14,094	16,758	-	20,342
1993	5,341	-	6,589	12,368	-	15,258	17,709	-	21,847
1994	5,547	-	6,943	12,935	-	16,193	18,482	-	23,136
1995	5,781	-	7,333	13,676	-	17,349	19,457	-	24,682

APPENDIX 3  
ZONING ORDINANCE AND MAP CHANGES

The following changes to the Town of Carolina Beach Zoning Ordinance text and official zoning map are recommended in order to implement the directives of the Future Land Use Element of the Land Use Plan update.

ZONING ORDINANCE TEXT CHANGES

1. Section 608.4.3 - Delete the phrase ", except as follows." and insert the phrase ", subject to any limitations or modifications established in the Future Land Use Element of the Town of Carolina Beach Land Use Plan." at the end of the first sentence of this Section. Delete the second sentence of this Section.
2. Section 608.5.6 - Insert the phrase ", subject to any limitations or modifications established in the Future Land Use Element of the Town of Carolina Beach Land Use Plan." at the end of the first sentence of this Section.
3. Delete existing Section 212.
4. Delete all references to the MB-1 Zoning District throughout the ordinance.
5. Add section 214.14 to Section 214: A-1 Amusement District:  
  
214.14: Density: The maximum density allowed in this zoning district shall be that allowed in the RA-6A zoning district.
6. Add reference to "T-1" in Section 306.6.
7. Delete existing Section 302.13(3) and replace with new Section 302.13(3) as follows:

T-1 Districts: Lots which have lost depth due to the enactment of the 1963 Session Laws of the North Carolina General Assembly relative to the Carolina Beach Erosion Control and Hurricane Wave Protection Project and the "Building Line," as further described in the Carolina Beach Town Code, may reduce the front yard requirements for Hotel/Motel uses from twenty (20) feet to ten (10) feet without approval from the Board of Adjustment. Allowances in 302.8 do not apply to further reduce this front yard setback for such uses.

APPENDIX 3  
ZONING ORDINANCE AND MAP CHANGES  
(Continued)

8. Add the following new sections.

CAROLINA BEACH ZONING ORDINANCE  
ARTICLE 200: DISTRICT REGULATIONS (CONTINUED)

Section 217: B-4 Planned Business District:

217.1: General description of the districts: These districts result from the recognition that the Town of Carolina Beach is a resort area inherently subject to a close intermingling of residential and commercial land uses. If proper development standards are adhered to and adequate buffering is provided, there is no reasons why such intermingling should result in conflicts between residential and commercial land uses; indeed, through creative site design, coupled with administrative and legislative review, the complementary aspects of the two land use types can be accentuated.

217.2: General regulations applicable: The General Regulations set forth in Article 100 of this ordinance apply to the B-4: Planned Business Districts.

217.3: Permitted uses: There are no unconditionally permitted uses in the B-4: Planned Business Districts. (See Section 217.4).

210.4: Uses permitted upon the issuance of a Conditional Use Permit: The following uses may be permitted in the B-4: Planned Business Districts after review, approval, and issuance of a Business Planned Development Conditional Use Permit in accordance with Article 600 in general and Section 608 in particular, and in accordance with the locational standards established in the Future Land Use Element of the Town of Carolina Beach Land Use Plan.

- |   |                                 |
|---|---------------------------------|
| (1) Retail sales  | (8) Residential uses subject to |
| (2) Personal services   | density restrictions of the     |
| (3) Offices   | "parent" zoning classification  |
| (4) Restaurants   | in conjunction with the         |
| (5) Galleries and museums   | Business Planned Development    |
| (6) Public & private schools  | regulations.                    |
| (7) Public community facilities   | (9) Commercial marinas          |
| (10) Hotel and motels (only in combination with commercial marinas)                           |                                 |
| (11) Recreational Uses  |                                 |
| (12) Accessory structures and uses  |                                 |
| (13) Other similar uses, as determined by the Town Council.                                   |                                 |
| (14) Expansion of or additions to Uses existing prior to the adoption of this classification. |                                 |

217.5: Sign regulations: Sign regulations for the B-4: Planned Business Districts are provided in Article 500 of this Ordinance.

217.6: Off-street parking and loading: The minimum requirements for off-street parking and loading are set forth in Article 400 of this ordinance. These requirements shall apply to all buildings and uses in the B-4 Planned Business Districts.

217.7: Fence regulations: The fence regulations set forth in Article 700 shall apply to the B-4 Districts.



CAROLINA BEACH ZONING ORDINANCE  
ARTICLE 200: DISTRICT REGULATIONS (CONTINUED)

Section 212: T-1 Tourist District

212.1: General description of the district: This district is established for the principal use of land for the town's tourist industry, and as a complementary district to the A-1 Amusement District and B-1 Central Business District. The primary land uses intended for this zoning district are hotels, motels and restaurants.

212.2: General regulations applicable: The General Regulations set forth in Article 100 of this ordinance apply to the T-1 Tourist District.

212.3: Permitted Uses: Within the T-1 Tourist District, no structure or land shall be used and no structure shall be hereafter erected, relocated, reconstructed or structurally altered, unless otherwise provided in this ordinance, except for one or more of the following purposes:

- (1) Accessory uses and structures, including non-commercial garages, non-commercial swimming pools, bath houses, non-commercial tennis courts and similar activities. Accessory structures shall not exceed one (1) story in height. Accessory structures shall not be permitted within any required front yard or side yard, nor within five (5) feet of any lot line. Accessory structures may occupy no more than thirty (30) percent of the area of a required rear yard.
- (2) Art galleries, libraries and museums.
- (3) Hotels and Motels.
- (4) Hotels and Motels with restaurants shall have at least twenty (20) rental units complete with individual baths.
- (5) Residential uses permitted under the RA-6A District.
- (6) Restaurants.

212.4: Uses permitted upon issuance of a Conditional Use Permit: The following uses may be permitted in this district after review, approval and issuance of a Conditional Use Permit in accordance with Article 600:

- (1) Parking lots serving uses in a different zoning district, provided that such lots shall contain a minimum of ten (10) full-size parking spaces.

CAROLINA BEACH ZONING ORDINANCE  
ARTICLE 200: DISTRICT REGULATIONS (CONTINUED)

- (2) Public utility transmission lines.
- (3) Business Planned Developments.
- (4) Residential Planned Developments.

212.5: Minimum lot area:

- (1) For Hotel and Motel uses, a minimum of eighteen thousand (18,000) square feet.
- (2) For other permitted uses, a minimum of six thousand (6,000) square feet.

212.6: Minimum lot width:

- (1) For Hotel and Motel uses, a minimum of one hundred (100) feet.
- (2) For other permitted uses, a minimum of fifty (50) feet.

212.7: Minimum front yard:

- (1) For Hotel and Motel uses, a minimum of twenty (20) feet.
- (2) For other permitted uses, a minimum of ten (10) feet.
- (3) The modifications described in Article 300 are applicable to this district.

212.8: Minimum side yards: At least twenty (20) percent of the width of each lot shall be devoted to side yards, provided that:

- (1) The least dimension of a side yard in this district shall not be less than seven and one half (7 1/2) feet.
- (2) The modifications described in Article 300 are applicable to this district.

212.9: Minimum rear yard:

- (1) For residential uses, five (5) percent of the depth of the lot, provided that this dimension need not exceed five (5) feet.
- (2) For other permitted uses, five (5) percent of the depth of the lot provided that this dimension need not exceed fifteen (15) feet.

212.10: Height regulations: Any structure exceeding fifty (50) feet in height shall require a Conditional Use Permit.

212.11: Sign regulations: The sign regulations set forth in Article 500 shall apply to the T-1 Tourist District.

212.12: Off-street parking: The minimum requirements for off-street parking are set forth in Article 400 of this ordinance. These requirements shall apply to all new buildings and uses and to additions to existing buildings and uses in the T-1 Tourist District.

212.13: Ground coverage: The total ground area covered by the principle building and all accessory buildings shall not exceed fifty (50) percent of the total lot area for Hotel and Motel uses, and shall not exceed forty (40) percent of the total lot area for all other permitted uses.

212.14: Density:

- (1) For Hotel and Motel uses, the maximum allowable density shall not exceed forty-five (45) units per acre.
- (2) For other permitted uses, the maximum allowable density shall not exceed twenty-nine (29) units per acre.

212.15: Fence regulations: The fence regulations set forth in Article 700 shall apply to the T-1 Tourist District.

## ZONING MAP CHANGES

Administrative rezoning of the areas described below will be necessary to achieve the directives of the Future Land Use Element.

- Rezone Carolina Beach Lake Conservation Area (those areas designated as "404" wetlands by the U.S. Army Corps of Engineers) to RA-20.
- Rezone the areas surrounding Pleasure Cay Subdivision and shown on Map FLU-2 as Low Density to RA-7.
- Rezone MB-1 and RA-6A areas on the western edge of Myrtle Grove Sound to RA-6.
- Rezone the area designated for the T-1 zoning district (See Map A-1 for the location of this district).
- Rezone to B-1 and RA-6 area adjacent to the existing B-1 district.
- Rezone to RA-6 the B-1 area west of Third Street.
- Rezone to B-3 the commercial node at the intersection of Dow Road and U.S. 421.
- Rezone to RA-6 the RA-6A oceanfront area north of Starfish Lane and east of Carolina Beach Avenue North.

ZONING MAP CHANGES (Continued)

- Rezone to RA-5A the RA-6A area south of Atlanta Avenue and east of Carolina Beach Avenue South.
- Rezone to RA-6 the RA-6A area west of U.S. 421 at Snow's Cut.
- Rezone to RA-20 the RA-6A zoned land at the Carolina Beach State Park entrance.
- Rezone to RA-7 the RA-20 areas described below:
  - (a) The area bounded on the north and west by Dow Road, on the east by the current B-3 zoning district and on the south by Goldsboro Avenue.
  - (b) The area between the existing B-3 zoning district and St. Joseph's Street, north of the Federal Point Shopping Center and south of the lots located on the southern edge of Lewis Drive.

MAP A-2

DRIFTWOOD LANE

ATLANTIC

CARL WINNER ST.

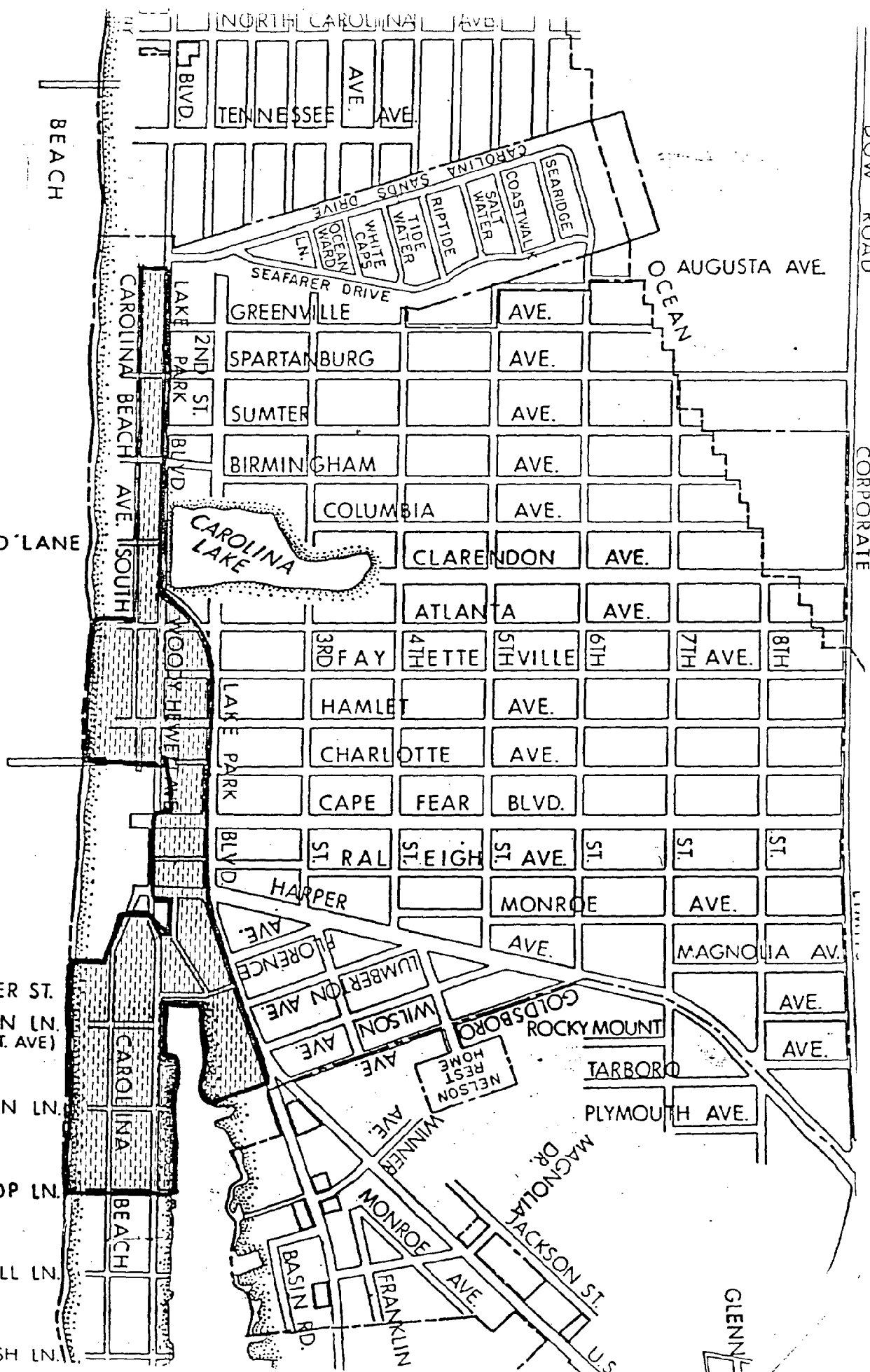
PELICAN LN.  
(WAS 1ST. AVE)

DOLPHIN LN

SCALLOP LN.

SEA GULL LN.

SAILFISH LN.



#### APPENDIX 4 LAND CLASSIFICATION SYSTEM

A required component of the Town of Carolina Beach Land Use Plan Update is the Land Classification Map. This Map is intended to serve as an infrastructural provision guide for the community, linking expected and desired future development with the public services necessary to accommodate that development.

The Land Classification Map for the Town of Carolina Beach contains three general categories: Developed; Transition; and Conservation. The Developed classification includes those areas in which full range of public service infrastructure is currently in place and in which urban densities exist. The Transition classification is reserved for those areas in which public service infrastructure is scheduled for provision in the near term (the next 5-10 years) and which are slated for urban densities within that period. The Conservation classification pertains to those areas which are not scheduled for urban development out of respect for their natural beauty and function, recreational potential, or cultural and aesthetic significance. Map A-2 locates each of these general land classifications.

The Future Land Use Element subdivides the Developed, Transition, and Conservation land classifications into more highly-defined development categories which directly relate to Town of Carolina Beach zoning classifications. Maps FLU-2, FLU-3, and FLU-4 locate these sub-categories of the general land classifications described in this Appendix. While the Future Land Use Element development categories have the status of zoning guidelines (as further described in Appendix 9) and are therefore subject to the same revision process as Town zoning regulations, any modification to the general land classifications described herein constitute an amendment to the Town's Land Use Plan and is subject to the public hearing process required for such amendments by State statutes.

LAND CLASSIFICATION MAP

DEVELOPED  
TRANSITION  
CONSERVATION

NOTE: ALL WATER BODIES & SHORELINE AREAS NOT CLASSIFIED ON THIS MAP ARE CONSIDERED TO BE CLASSIFIED CONSERVATION BY THE TOWN.

THE PROSECUTION OF THIS CASE WAS FINANCED BY PAUL THROCKMOR  
AS UNDER A GRANT FROM THE UNITED STATES DEPARTMENT  
OF HOUSING AND URBAN DEVELOPMENT UNDER THE PROVISIONS OF  
SECTION 701 OF THE HOUSING ACT OF 1964 AS AMENDED.  
CASE FILE NUMBER OF GOVERNMENT  
JUNE 1960

THE INFORMATION ON THIS DOCUMENT WAS FURNISHED IN PART THROUGH A GRANT PROVIDED IN THE NORTH CAROLINA MANAGEMENT PROGRAM, THROUGH FUNDS PROVIDED BY THE COASTAL ZONE MANAGEMENT ACT OF 1972. AS AUTHORIZED, SUCH IS ADMINISTERED BY THE OFFICE OF COASTAL MANAGEMENT, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION.

**STREET NAMES AND CORPORATE LIMITS CORRECT THEM TO MAKE THEM**



APPENDIX 5  
NORTHERN EXTENSION TRAFFIC ESTIMATES

The Northern Extension area of Carolina Beach, with its single entrance and exit point for automobile traffic, poses perhaps the most significant traffic circulation problem for the Town. Current development will generate an Average Daily Traffic (ADT) volume of 10,808 trips per day at 75% occupancy given the traffic generation data listed below. This amount of traffic can be handled by the existing traffic circulation system, although there will be occasional delays in movement, primarily at the "bottleneck" at the intersection of Carl Winner Street and Canal Drive. Greater occupancy rates or substantial day-visitor traffic will result in the capacity of the existing transportation system to adequately handle traffic being exceeded.

ADT GENERATION RATES  
FOR LAND USE TYPES

Single Family and Duplex	-	11 trips per day per unit
Multifamily	-	8 trips per day per unit
Hotel/Motel	-	6 trips per day per unit

Source: Florida DOT standards

If fifty percent (50%) of the existing lots developed as single family or duplex units are converted to full density multifamily uses (4 units/lot, essentially), and all existing vacant property is also developed at full density given its current zoning status, an additional 6,597 trips per day at 75% occupancy will be added to the system, far exceeding the existing roadway capacity. It is essential, therefore, that the Town take all necessary steps to implement the traffic circulation improvements established in the Traffic Circulation Element for the Northern Extension in order to alleviate this looming transportation problem.

APPENDIX 6

FIVE YEAR SHOREFRONT ACCESS PLAN  
TOWN OF CAROLINA BEACH, N.C.

Date of Adoption:  
September 11, 1984

PREPARED BY:  
PLANNING AND ZONING DEPARTMENT  
TOWN OF CAROLINA BEACH, N.C.

## PREFACE

The Town of Carolina Beach is a shorefront community in many ways. Geographically, the Town is nearly surrounded by the waters of the Atlantic Ocean, the Cape Fear River and the Atlantic Intracoastal Waterway. Myrtle Grove Sound bisects the center of the Town from the Intracoastal Waterway to the Town Hall. Within the Town's corporate limits there are approximately eight miles of shorefront, both natural and man-made. There are another seven miles of shorefront within the Town's extraterritorial boundary.

Economically, the Town of Carolina Beach derives much of its income from its shorefront. The Town's large tourist industry is based upon the attraction of the shorefront to visitors from mainland areas. The unprecedented boom in housing construction in recent years also owes its momentum to the attraction of the Carolina Beach shorefront. Commercial fisherman and marinas produce a substantial portion of the Town's income; these enterprises are located along the shorefront.

Culturally, the Town has always been a shorefront community. Residents and visitors alike are drawn to the many amenities of the Town's beaches and shores. Shorefront activities like boating, fishing, swimming, sunning and surfing add greatly to the high quality of life found in the Town of Carolina Beach.

It is, therefore, extremely important that public access to the Carolina Beach shorefront be maintained and increased. As more people come to the Town, both as residents and as visitors, existing public access areas are becoming increasingly crowded. The quality of life that draws these people to Carolina Beach is consequently threatened. The following Shorefront Access Plan for the Town of Carolina Beach establishes the policies of the Town regarding public shorefront access in order to insure the continued high level of shorefront access that residents and visitors have come to expect.

The Shorefront Access Plan is divided into four sections: Purpose and Intent; Inventory of Shorefront Access Facilities; Shorefront Access Policies; and Shorefront Access Program. The Purpose and Intent section discusses the rationale behind the Shorefront Access Plan. The Inventory of Shorefront Access Facilities section lists existing shorefront access facilities currently utilized in Carolina Beach. The Shorefront Access Policies section establishes the policy direction for future shorefront access decision making. Finally, the Shorefront Access Program indicates specific projects which are intended to implement the policy directives of the plan over the next five years.

## PURPOSE AND INTENT

The Town of Carolina Beach has long recognized its responsibility for providing effective shorefront access. The Town owns and supervises the operation of the Myrtle Grove Marina, a scenic and economically important shorefront facility in the downtown area of Carolina Beach. The shorefront access provided by the State of North Carolina at Carolina Beach State Park has always been supported by the Town through coordinative efforts with the State. The Town has supported, through a large bond referendum, the renourishment of the Town's Atlantic beachfront, thereby ensuring an attractive, ecologically-functional shorefront for use by residents and visitors. The Town, acting both on its own and in conjunction with the North Carolina Department of Natural Resources and Community Development, has constructed a number of dune crossover facilities and parking spaces at public beach access points owned and maintained by the Town.

The intent and purpose of this Five Year Shorefront Access Plan for the Town of Carolina Beach is, therefore, to continue the Town's long-standing commitment to improved shorefront access for its citizens and visitors. The policies and programs set out in this plan are intended to complement and improve upon existing shorefront access facilities and to provide increased shorefront access throughout the Town of Carolina Beach in an effective and comprehensive manner.

## INVENTORY OF SHOREFRONT ACCESS FACILITIES

The following facilities are owned and maintained by the Town of Carolina Beach or by other public agencies, and have either the existing capacity to provide shorefront access to the Town's residents and visitors or the potential for providing such access in the future.

### Yacht Basin

The Town owns and operates a marina facility at the southern terminus of Myrtle Grove Sound. The facility not only provides shorefront access for the private boat operators and fisherman that lease boat slips from the Town, but also provides a scenic area for the public to view Myrtle Grove Sound and the picturesque activities of the fishing and recreational boats utilizing the marina.

### Public Beach Access Areas

The Town owns and maintains some twenty-three public beach access areas. These beach access areas range in type from signed, but otherwise undeveloped access points to fully developed access areas with on-site parking and dune crossover facilities. The most significant of these is the Town's Boardwalk, a 1200 foot long public beach access area that fronts the Town's main tourist commercial district. Further, each public street-end east of Carolina Beach Avenue North or Carolina Beach Avenue South has been designated and signed as a public beach access area, with funding for the signs coming from grant monies provided by the N.C. Office of Coastal Management's Shorefront Access Program. This same grant program has helped fund the construction of nine dune crossover structures, three of which have been constructed at the Boardwalk, with the remaining six structures being located at the following street ends: Spartanburg Avenue, Driftwood Lane, Scallop Lane, Seagull Lane, Sandpiper Lane, and Sand Dollar Lane. The Town is also currently attempting to construct a tenth crossover facility in the Boardwalk area with its own funds.

### Public Beachfront

The Town of Carolina Beach is unique in that it is one of the only two municipalities in North Carolina that owns its beachfront area! This public beach runs from essentially the CAMA Building Line to the mean high water line. The public beach is maintained for the enjoyment of the residents and visitors to the Town. It has recently been the focal point for an \$11 million beach renourishment project. Due to this recent improvement, this public beach is perhaps the finest recreational beachfront in North Carolina.

### Public Sound Access Areas

The Town owns and maintains thirteen street end access points to Myrtle Grove Sound. Two of these access areas have been utilized as pumping station sites, reducing the actual number of sound access points to eleven. Of these eleven, nine are twenty-five foot wide accesses, one is a forty foot access and one is a fifty foot wide access point. None of these sound access areas have been developed as public facilities of the present time.

### Municipal Parking Lots

The Town owns and operates two municipal parking lots for the purpose of providing public shorefront access to Myrtle Grove Sound and the Boardwalk. Some 124 spaces are provided in these two lots.

### Carolina Beach State Park

The State of North Carolina owns and operates a marina and boat launching facility at the Carolina Beach State Park which provides access to the Cape Fear River. The State Park is a popular shorefront access area for the Town's residents and visitors alike.

### Snow's Cut

The Army Corps of Engineers owns a five hundred foot wide swath of land on either side of the centerline of Snow's Cut. The only public shorefront access that has been provided in this area has been the state boat launching facility at the intersection of Snow's Cut and Myrtle Grove Sound. The Corps and the State also have an agreement for public use of a portion of this property within the Carolina Beach State Park.

### Sunny Point Military Ocean Terminal Buffer Zone

Most of the western portion of Carolina Beach falls within the buffer zone of the Sunny Point Military Ocean Terminal, a munitions loading and off-loading facility. The buffer zone was established to reduce potential property damage and loss of life associated with an accident at the terminal. Public use of the shorefront within this buffer zone is not currently feasible due to the possibility of such an accident.

## SHOREFRONT ACCESS POLICIES

The following shorefront access policies are established in order to provide a firm direction to decision-making regarding shorefront access in the Town of Carolina Beach. Clear, substantive policies are a necessary part of any successful plan. They lay the groundwork on which future implementation programs are constructed, and assist the Town in making comprehensive decisions which will help achieve the goal of providing effective, balanced, and sufficient shorefront access for the Town's citizens and visitors.

### GOAL: PROVIDE INCREASED SHOREFRONT ACCESS FOR THE CITIZENS OF AND VISITORS TO THE TOWN OF CAROLINA BEACH IN A MANNER CONSISTENT WITH THE FOLLOWING POLICIES

#### Policy #1 SEEK OUT REGIONAL, STATE, AND FEDERAL FUNDING FOR SHOREFRONT ACCESS PROJECTS

The large number of visitors and tourists that utilize shorefront access facilities in the Town of Carolina Beach make shorefront access within the Town more than a strictly local responsibility. Outside agency funding sources should be tapped so that the responsibility of providing adequate shorefront access is shared equitably.

#### Policy #2 PROVIDE FOR A BALANCED SHOREFRONT ACCESS PROGRAM

The Town of Carolina Beach recognizes that while the Atlantic Ocean beachfront is the Town's primary shorefront amenity, shorefront access to other bodies of water, such as Myrtle Grove Sound, the Cape Fear River and the Intracoastal Waterway, is necessary for the Town to achieve a balanced shorefront access program that will meet the wide range of needs of its citizens and visitors.

#### Policy #3 PROVIDE FOR A COMPREHENSIVE SHOREFRONT ACCESS PROGRAM

The Town of Carolina Beach recognizes that an effective shorefront access program requires that a number of issues peripheral to actual shorefront access be considered in a comprehensive manner. For instance, the provision of adequate parking for shorefront users does not increase the amount of shorefront access per se, but is nevertheless a key component in effective shorefront access and cannot therefore be ignored.

#### Policy #4 PROVIDE FOR A COST-EFFECTIVE SHOREFRONT ACCESS PROGRAM

The Town of Carolina Beach recognizes that shorefront access is an important and popular concern for its citizens and visitors and that it would be almost impossible to provide too much shorefront access. The Town also recognizes its financial limitations regarding shorefront access. Therefore, any shorefront access program must concern itself with achieving the most effective and equitable level of shorefront access for the money budgeted.

Policy #5   ENCOURAGE SHOREFRONT ACCESS THAT IS COMPATIBLE WITH  
EXISTING AND FUTURE LAND USES

It shall be a policy of the Town to consider the full impact of its shorefront access program on existing and future land uses and to mitigate the negative and accentuate the positive effects of the program whenever feasible and desirable.

Policy #6   CONTINUE TO MAINTAIN AND/OR PROVIDE SUPPORT FOR  
EXISTING SHOREFRONT ACCESS FACILITIES

It shall be a policy of the Town to require new development to pay its fair share of the cost of providing adequate shorefront access since such new development places increased pressure on existing shorefront access facilities and establishes a need for future facilities. A portion of the existing General Fund impact fee should be designated for shorefront access projects.



## SHOREFRONT ACCESS PROGRAM

The following program for shorefront access begins the implementation process for the policy directives established in the previous section. This program addresses specific projects for improving shorefront access that have been given priority by the Town of Carolina Beach. The program is divided into three parts: short-range projects; medium-range projects; and long-range projects. Short-range projects are those projects which are ranked the highest in terms of immediate feasibility; they are high priority projects for which funding can be generated and/or anticipated. Medium-range projects are those projects of a lower level of priority and/or for which funding sources have not yet been identified. Long-range projects have a still lower level of priority or current feasibility, but provision should be made in this shorefront access plan for their eventual implementation.

### Short-Range Projects

The Town of Carolina Beach recognizes that its most visible and effective shorefront access areas (other than the Boardwalk) are its street-end beach and sound access points. It is intention of the Town to develop each of these street-end areas into shorefront access facilities for the use of its residents and visitors. While it is financially impossible to develop all of these street-end areas into first class facilities in the short-term (one year), certainly all of them can be so developed within the next five years. Several of these street-end shorefront access areas are scheduled for improvement as short-range projects; the remainder will be considered under the section dealing with medium-range projects.

In order to protect these street-ends from encroachment by development that would limit their usefulness as shorefront access areas, the Town Council shall enact an ordinance to restrict driveway access for all lots with frontage on Carolina Beach Avenue South, Carolina Beach Avenue North and Canal Drive to those roadways. This will prevent corner lots from utilizing side streets for driveway access and thus **eliminating potential shorefront access parking areas.** Existing driveway accesses on the side streets will become non-conforming uses.

In addition to this ordinance, four specific access improvement projects are proposed for the short-term. These projects, listed in order of priority, involve significant development of shorefront access facilities at both the beach and sound street-ends.

Figures 1-4 illustrate the type of development proposed at each of these project sites. These same figures have been submitted with the grant applications to the Office of Coastal Management for FY 1984-85.

- 1.) Oystershell Lane - The eastern terminus of Oystershell Lane is a popular Northern Extension beach access area, with numerous multifamily and single family dwelling units in its vicinity.

Four on-site parking spaces can be created along a stabilized drive. A dune crossover, bike rack, trash receptacle, and signage complete this beach access facility.

- 2.) Pelican Lane - The eastern end of Pelican Lane is also a popular beach access point, even though its users must walk from the municipal parking lots near the Town Hall, or from other parking areas, since there is no on-site parking. Over one hundred parking spaces are within walking distance of this beach accessway. It is also located close to the Boardwalk area and has a seasonally-manned lifeguard station.

Because the Pelican Lane public beach access crosses through the parking lot of the Surfside Motel, its boundaries should be clearly marked so that public encroachment on private property does not occur. There is sufficient space at this access point to create at least two on-site parking spaces, both of which should be located at the eastern terminus of the Pelican Lane right of way. Some form of physical separation should be installed at the sides of these spaces to prevent encroachment on private property.

A dune crossover structure and trash receptacle should be also provided at this beach access area.

- 3.) Starfish Lane - The western end of Starfish Lane provides the Town with an opportunity to develop its first shorefront access facility to Myrtle Grove Sound.

To enhance the scenic view of the sound that this site provides, a covered pavilion and pier should be constructed across the marsh grasses that line the shore. A stabilized driveway and three stabilized parking spaces can be constructed near the pavilion to allow vehicular access to the site. Rope fencing should be installed to protect the marsh grasses. Signage, a trash receptacle, and a bike parking stand should also be provided.

- 4.) Sandpiper Lane - The western end of Sandpiper Lane provides a location for another soundfront access project. covered pavilion and pier should be constructed across the marsh grasses, and paved parking for two automobiles should be provided. Rope fencing, privacy fencing, signage, a trash receptacle, and bike rack should also be provided.

#### Medium-Range Projects

In order for the Town to achieve its intention of providing shorefront access at each of its street-end beach and sound access points, the following projects should be undertaken within the next five years.

- 1.) Beach Access Areas - The following street-end beachfront access areas should be provided with dune crossover structures, sand fencing, bicycle racks and trash receptacles, along with parking improvements as indicated. Provision should be made for lifeguard and emergency vehicle access to the beachfront at several of these street-end facilities.
- Hamlet Avenue - Five on-site parking spaces along with an emergency vehicle access ramp have been proposed for construction by a private developer. An additional sixteen spaces can be created in the vicinity of the access area by striping portions of Hamlet Avenue and Cape Fear Street.
  - Atlanta Avenue - Three parking spaces could be provided east of Carolina Beach Avenue South.
  - Driftwood Lane - This area has an existing crossover plus three parking spaces, east of Carolina Beach Avenue South. Three additional parking spaces could be provided on the south side of Driftwood Lane, west of Carolina Beach Avenue South.
  - Lake Street - Three parking spaces could be provided east of Carolina Beach Avenue South.
  - Dolphin Lane - This beach access point crosses a motel parking lot in much the same manner as the one at Pelican Lane. Two parking spaces could be provided at the eastern terminus of the right of way. The public beach access boundaries should be marked to prevent encroachment on private property.
  - Sailfish Lane - Three parking spaces could be provided east of Carolina Beach Avenue North.
  - Oyster Shell Lane - Three parking spaces could be provided east of Carolina Beach Avenue North.

- Seahorse Lane - Five parking spaces could be provided east of Carolina Beach Avenue North on an existing paved area.
- Scotch Bonnet Lane - Five parking spaces could be provided east of Carolina Beach Avenue North.
- Starfish Lane - Five to six parking spaces could be provided east of Carolina Beach Avenue North.
- Clam Shell Lane - Five to six parking spaces could be provided east of Carolina Beach Avenue North.
- Periwinkle Lane - Five parking spaces could be provided east of Carolina Beach Avenue North.
- Sandfiddler Lane - This access area has been encroached upon by curbing and landscaping installed for a condominium development. provided east of Carolina Beach Avenue North. This material should be removed at the developer's expense. Six parking spaces could then be provided east of Carolina Beach Avenue North.
- Sea Oats Lane - There is room for three to four parking spaces on an existing paved area east of Carolina Beach Avenue North, after encroachments have been removed at the installer's expense.
- Saltmarsh Lane - Two parking spaces could be provided east of Carolina Beach Avenue North.

2.) Sound Access Areas - The fifty foot wide sound access area located at the western terminus of Maryland Avenue should be developed as a passive recreation facility with a pavilion and four to eight parking spaces; care should be taken to develop this facility in a manner that is compatible with the single family neighborhood in which it exists. The forty foot wide sound access point at Delaware Avenue should be developed as a major access facility, with a large pavilion, possibly with a pier or dock, and approximately ten to fifteen parking spaces. The following street-end access points should be provided with either a pavilion or dock, and trash receptacle. Limited parking facilities may be possible at some of these sites. Provision should also be made to allow access to the sound for firefighting equipment.

Dolphin Lane  
 Scallop Lane  
 Seagull Lane  
 Sailfish Lane  
 Seahorse Lane  
 Scotch Bonnet Lane  
 Sand Dollar Lane

- 3.) Municipal Marina - A shorefront access project not involving street-end accessways that should be undertaken in the next five years involves the re-bulkheading of the municipal marina at Myrtle Grove Sound. When this project is initiated, the Town should consider providing a larger improved boardwalk at the marina site. These improvements may require sacrificing some boat docking spaces to accommodate their implementation.

#### Long-Range Projects

The projects or recommendations discussed below are currently considered to be outside the planning horizon of this plan. They are provided for in this document to help coordinate the future planning and development of the Town with the policy directives established in this plan.

- 1.) The Army Corps of Engineers should be contacted regarding the possibility of an agreement between the Corps and the Town of Carolina Beach that would allow the Town to develop a public shorefront access facility on Snow's Cut.
- 2.) Should the necessity for the Sunny Point Military Ocean Terminal Buffer Zone ever be eliminated, the Town of Carolina Beach should be prepared to act so as to reserve as much public shorefront access as possible within this buffer zone area.
- 3.) The Town should explore the possibility of constructing walkways and observation decks that would allow improved public access to the estuarine marsh areas south of the Carolina Beach Inlet.
- 4.) When any major street paving project is embarked upon, the Town should also attempt to pave and/or re-pave its existing street-end beach and sound access points, whenever feasible or desirable, in order to increase the usability of these areas for public shorefront access.
- 5.) The Town of Carolina Beach should continue to support, to the best of its financial abilities, any needed renourishment of its public beachfront. This is the most ecologically-sound, cost-effective method for the Town to preserve its most important natural resource.
- 6.) The Town should begin planning for another centralized parking area (perhaps a parking garage) near the Boardwalk to accommodate the increased demand for shorefront access parking that will occur in the future.

- 7.) At some point in the future, increased traffic flow or other factors may result in the conversion of Canal Drive from a two-way facility into a one-way facility (heading south). When and if this occurs, the Town should designate parking spaces along Canal Drive for shorefront access, where such parking can be located without interfering with driveway access and side street intersections with Canal Drive.
- 8.) Bikeways and sidewalks should be provided along Carolina Beach Avenue North and Canal Drive to facilitate shorefront access for residents and visitors not traveling in automobiles.
- 9.) The Town should initiate contact with the U.S. Military regarding public use of the lake created by the renourishment of the beachfront area. This lake has navigable contact with the Cape Fear River, making it an area that is eligible for State-supported grants for shorefront access projects.

APPENDIX 7

BIKEWAY PLAN  
TOWN OF CAROLINA BEACH, N.C.

Date of Adoption:  
July 22, 1985

PREPARED BY:  
PLANNING AND ZONING DEPARTMENT  
PARKS AND RECREATION DEPARTMENT  
TOWN OF CAROLINA BEACH, N.C.

1985 BIKEWAY PLAN  
TOWN OF CAROLINA BEACH

Introduction

As Carolina Beach develops into a coastal resort town, new and more varied recreational facilities will be demanded by its residents and visitors. For the Town to achieve its potential as an outstanding place in which to live, visit and work, its current recreational amenities must be developed, upgraded and augmented. It is also important for the Town to maintain a balance between tourist-oriented recreational facilities and those provided more-or-less exclusively for year-round residents, as each of these groups has unique needs and makes a unique contribution to the Town's economy and culture. (Introduction to Recreation Element; 1985 Town of Carolina Beach Land Use Plan Update.)

The above excerpt also serves as a good introduction to the 1985 Carolina Beach Bikeway Plan. It sets forth the Town's recognition of the importance of improving its existing stock of recreational facilities in order to satisfy the needs and wishes of its residents and visitors. This recognition, coupled with positive action to achieve recreational goals, will result in a wide variety of highly-accessible recreational facilities throughout the Town. Bikeways must certainly be a part of these improvements.

In a recent survey of Carolina Beach residents and property-owners (Town of Carolina Beach Land Use Survey; Spring, 1985), respondents indicated that bikeways and jogging trails ranked high on their list of desired recreational improvements. Resident respondents selected bikeways and jogging trails as their third-most-desired recreational improvement (behind beach access facilities and a senior citizens activities center); non-resident respondents felt that only beach access facilities deserved a higher priority than bikeways and jogging trails in terms of improvements to the Town's recreational facilities.

Given the consensus of resident and non-resident opinion on this matter, it is essential that the Town begin planning for a comprehensive system of bikeway's if it is to remain responsive to the wishes of its citizens. Such a bikeway system should link major Carolina Beach attractions (e.g., the Town's parks, beach and sound access areas, primary shopping areas, and the Carolina Beach Elementary School) in a manner which promotes safe and efficient bicycle transit between those places of attraction.

The cost of providing a bikeway system is also a highly important concern. Carolina Beach taxpayers have every right to expect cost-efficient utilization of their tax dollars. The design and provision of bikeway facilities must therefore be coordinated with street paving, repaving, and construction projects in order to result in the most efficient use of public monies.



Public safety is also a primary concern in any bikeway plan. In the past two and a half years, there have been 10 bicycle accidents reported to the Carolina Beach Police Department, all of which involved a collision between a bicycle and an automobile. A properly designed bikeway system, along with an active safe bicycling education program, should serve to substantially improve bicycle safety.

The following sections discuss various bikeway issues, establish a set of policies for the Town to follow in planning and implementing a bikeway program, and provide for a safe, comprehensive and cost-efficient bikeway system.

### BIKEWAY ISSUES

This section contains a discussion of a number of important bikeway issues, ranging from the existing cycling situation in Carolina Beach to the main types of bikeway users.

#### Existing Situation

The Town of Carolina Beach currently has no bikeways or road shoulders designed to promote safe cycling. Since 1983, there have been ten bicycle accidents reported to the Police Department. Table BP-1 provides additional information about these accidents.

Table BP-1: Bicycle Accidents (1983-1985)

<u>YEAR</u>	<u>ACCIDENT LOCATION</u>	<u>ACCIDENT TYPE</u>
1983	Sandpiper Lane & Carolina Beach Avenue N.	Bike & Car
1983	Canal Drive and Scallop Lane	Bike & Car
1984	U.S. 421 at Hardees	Bike & Car
1984	Carolina Beach Avenue North & Pelican Lane	Bike & Car
1984	Cape Fear Blvd. and Woody Hewitt Avenue	Bike & Car
1984	U.S. 421 & Cape Fear Blvd.	Bike & Car
1984	Cape Fear Blvd. & 3rd Street	Bike & Car
1984	Canal Drive & Scallop Lane	Bike & Car
1984	Canal Drive & Dolphin Lane	Bike & Car
1985	Fayetteville Avenue & 4th Street	Bike & Car

While it cannot be concluded that the existing unstructured bicycling situation resulted in those accidents, it should be pointed out that most of the accidents occurred in areas of major attraction for cyclists: the beach, the Amusement District and the Central Business District. Provision of well-designed bikeways in these areas would certainly make bicycle accidents less likely.

The Town does operate a highly-successful bicycle safety educational program through its Police Department. Contact is made with elementary school age children and the fundamentals of safe cycling are explained to these children through interesting events like bicycle rodeos. By promoting and teaching safe bicycling techniques to children, responsible habits are learned which

should continue with them throughout their lives. This worthy effort at education should be encouraged and continued.

### Design Standards

Most people think of separate facilities, where cars and bikes are physically separated (like those provided at Wilmington's Greenfield Park, to use a local example), when they think of bikeways. However, the national trend in bikeways is toward shared facilities where bikeways are designed for the edges and shoulders of existing roadways. Shared facilities are generally cheaper to provide since they can usually be constructed on existing pavement and rights-of-way. Shared facilities are also generally safer and more effective in meeting the needs of cyclists because, as part of a road system, they are more likely to be kept free of glass and other debris and are more likely to take cyclists where they want to go.

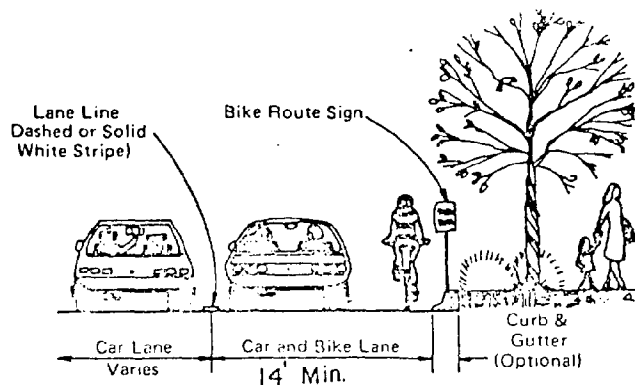
For shared facilities, the standard is the four foot wide, paved, one way bike lane. Variations on this standard are shown in Figure BP-1: Shared Facility Standards. These types of bike lanes, because they are constructed to officially-recognized design standards, can be marked as bike routes without creating liability problems for the Town.

Alternatives to the standard bike lane are paved road maintenance shoulders from one to three and a half feet in width. These shoulders increase bicycle safety by allowing more room for cyclists on roadways and also reduce road maintenance costs. Unfortunately, because design standards are not met, road maintenance shoulders are not recommended for signing as part of a bike route system due to liability considerations.

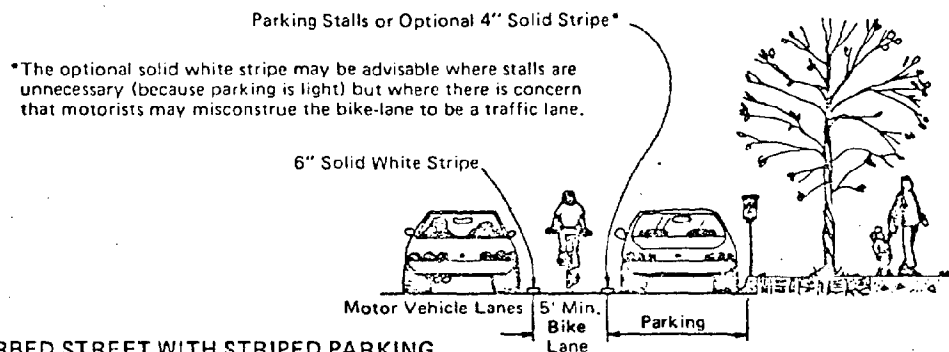
Other design standards which should be taken into account when planning bikeway systems include:

- (1) "Stranding" of cyclists - any bike route system should not abruptly end, leaving the bicycle rider with no obvious option to continue.
- (2) Common-sense design at intersections and other hazardous locations - bikeway design planning must concentrate on the most common-sense approach to assist cyclists in coping with hazardous areas because cyclists will naturally tend to follow the most logical solution to the hazard problem at hand. Complicated hazard avoidance schemes are generally bound to fail since they do not take into account cyclist behavior patterns.
- (3) Maintenance of bike lanes and road shoulders - a regular maintenance program for bikeways is necessary to keep them operating at peak efficiency and safety.

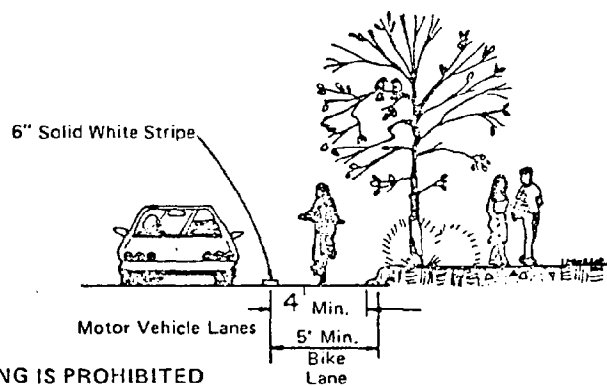
a. WIDE CURB-LANE



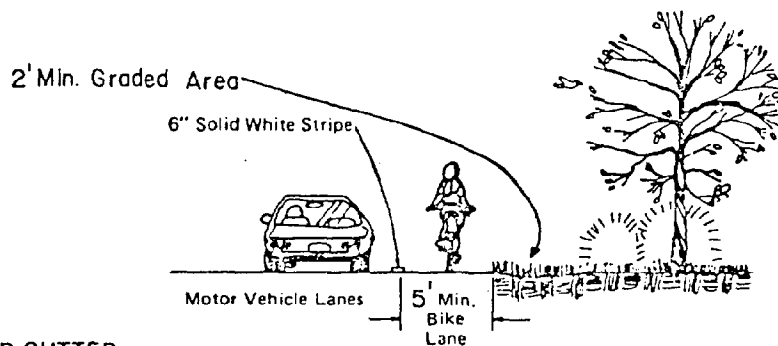
b. CURBED STREET WITH STRIPED PARKING



c. CURBED STREET WHERE PARKING IS PROHIBITED



d. STREET WITHOUT CURB OR GUTTER



Source: Federal Highway Administration, Department of Transportation, "Proposed Design and Construction Criteria for Bikeway Construction Projects." Federal Register, Monday, August 4, 1980.

FIGURE BP-1:  
SHARED FACILITY DESIGN STDS.

## Alternative to the Automobile

A good bikeway system provides both residents and visitors with an alternative to the automobile. This serves to reduce roadway congestion and perhaps postpone or eliminate expensive road construction projects by helping to keep automobile traffic levels below road design capacities.

### User Types

There are three primary bikeway user types: the commuter, the shopper and the recreational rider. Each user type is defined by the ultimate goal he or she has in mind when using the bikeway system: The commuter is interested in getting to work or to school; the shopper is interested in getting to the various shopping facilities; the recreational rider is interested in having an enjoyable bike ride.

While facility design standards remain the same for all three user types, the location of bikeways must take into account the purpose each user type has in mind when travelling by bicycle. For example, a successful bikeway system must provide good routes to major work places and schools, primary shopping areas, and main recreational attractions. By achieving a balance between different user needs, a successful bikeway program can serve the cycling community as a whole.

## BIKEWAY PROGRAM POLICIES

The following bikeway program policies are established in order to provide a firm direction to decision-making regarding bikeways in the Town of Carolina Beach. Clear, substantive policies are a necessary part of any successful plan. They lay the groundwork on which future implementation programs are constructed, and assist the Town in making comprehensive decisions which will help achieve the goal of providing an effective, balanced, and sufficient bikeway system for the Town's citizens and visitors.

### Policy #1 SEEK OUT REGIONAL STATE, AND FEDERAL FUNDING FOR BIKEWAY PROJECTS

The large number of visitors and tourists that will utilize **bikeway facilities in the Town of Carolina Beach** make the provision of such facilities within the Town more than a strictly local responsibility. Outside agency funding sources should be tapped so that the responsibility of providing these facilities is shared equitably.

### Policy #2 PROVIDE FOR A BALANCED BIKEWAY PROGRAM

The Town of Carolina Beach recognizes that it will be necessary to provide a balanced bikeway program that will meet the wide range of needs its resident and non-resident cyclists.

Policy #3 PROVIDE FOR A COMPREHENSIVE BIKEWAY PROGRAM

The Town of Carolina Beach recognizes that an effective bikeway program requires that a number of issues peripheral to actual provision of bikeways be considered in a comprehensive manner. For instance, a bicycle safety program can assist in making bikeway facilities safer; also, linking bikeway construction with programmed street construction projects results in a cost effective and planned system of bikeways.

Policy #4 PROVIDE FOR COST-EFFECTIVE BIKEWAY PROGRAM

The Town of Carolina Beach recognizes that a bikeway system is an important and popular concern for its residents and visitors. The Town also recognizes its financial limitations regarding the provision of bikeways. Therefore, any bikeway program must concern itself with achieving the most effective facilities for the money budgeted.

Policy #5 ENCOURAGE A BIKEWAY SYSTEM THAT IS COMPATIBLE WITH EXISTING AND FUTURE LAND USES

It shall be a policy of the Town to consider the full impact of its bikeway program on existing and future land uses and to mitigate the negative and accentuate the positive effects of the program whenever feasible and desirable.

Policy #6 PROVIDE FOR EQUITABLE BIKEWAY PROVISION

It shall be a policy of the Town to require new development to pay its fair share of the cost of providing adequate bikeway facilities since such new development places increased pressure on existing facilities and establishes a need for future facilities.

THE BIKEWAY PLAN

The ultimate goal of the 1985 Bikeway Plan is to establish a marked bicycle route system as shown on Map BP-1. Because of the expense involved in such a system, and because, in several cases, rights-of-way do not yet exist or streets are unpaved, achieving this ideal system will have to occur on a phased basis. Priority projects are listed below, but the Town should always be alert to achieving any new link in the system. Unless otherwise indicated, all projects are shared facilities.

Short-Range Projects

These are projects which are judged to have a relatively higher degree of priority than the long range projects which follow. The establishment of these general levels of priority is based upon a subjective rating of such factors as interconnections with other existing or proposed local and regional bike routes, major bicycle trip ends and existing roadway conditions.

Maps BP-2 and BP-3 illustrate how the projects proposed below will link most major trip ends, as well as provide standard bikeway facilities in areas of higher accident potential. No priority ranking is intended in the order in which projects are listed. No right-of-way acquisition is necessary for these projects.

- U.S. 421 (Lake Park Blvd.) between the southern terminus of the Snow's Cut Bridge and Dow Road. This project would improve a link in an existing intra-state bike trail (the Cape Fear Run).
- Dow Road throughout the Town's extraterritorial jurisdiction This project provides access to the Carolina Beach State Park and serves to connect Carolina and Kure Beaches with a bikeway.
- Harper Avenue between Dow Road and Canal Drive. This project would promote better bicycle access with the residential areas and the Central Business District and the beach.
- Canal Drive between Harper Avenue and Salt Marsh Lane. Improved access to beach and sound access facilities constructed jointly by the Town and the State would result from this project.
- Cape Fear Blvd. between Dow Road and Woody Hewett Avenue. This project would link the residential areas with Katie B. Hines Park, the Central Business District and the Amusement District (Boardwalk).
- Clarendon Avenue between Dow Road and Carolina Beach Lake (Also includes separate bikeway facilities around the Lake and Chappell Park recreational areas.) This project would provide access to the Carolina Beach Elementary School, to Chappell Park (a regional facility) and to the Carolina Beach Lake recreation area.
- Sixth Street between Harper and Clarendon Avenues. This project would provide a north-south link between the Harper Avenue, Cape Fear Blvd. and Clarendon Avenue projects.
- U.S. 421 (Lake Park Blvd.) between Harper Avenue and St. Joseph's Street. This project would serve a link between the central areas of the Town and the Federal Point Shopping Center (Carolina Beach's major shopping facility.)
- St. Joseph's Street/Lewis Drive between U.S. 421 and Otter Road. This project would complete the link between the central Town areas, the Federal Point Shopping Center, and the residential developments along Myrtle Grove Sound.

#### Long Range Projects

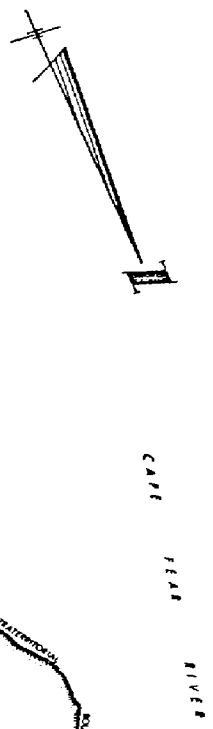
The remainder of the projects shown on Map BP-1 will complete the Carolina Beach bikeway system as put forward in this plan. Two of the projects shown on Map BP-1 will require dedication of right-of-way (and, likely, the construction of the facilities themselves) by private developers; these projects are the Winner

Avenue extension and interconnection with Sixth Street and the link between U.S. 421 (at Dow Road) and St. Joseph's Street. A third acquisition of an easement or right-of-way by the Town will be necessary to complete the link between the Carolina Sands subdivision and Bonito Lane (old Fifth Street) in Wilmington Beach; a four to eight foot wide easement will be necessary.

Map BP-4 indicates the existing and proposed recreational facilities identified for Carolina Beach in its 1985 Land Use Plan Update. When this map is compared with the bikeway route system (Map BP-1) it can be seen that all major recreational facilities will have access through the Carolina Beach bikeway system.

#### Other Projects

When Town streets and roads are constructed, paved, and/or repaved, wide maintenance shoulders should be installed. This will result in improved cycling safety, as well as in lower maintenance costs.



CAPT. FEAR RIVER

# TOWN OF CAROLINA BEACH, N.C.

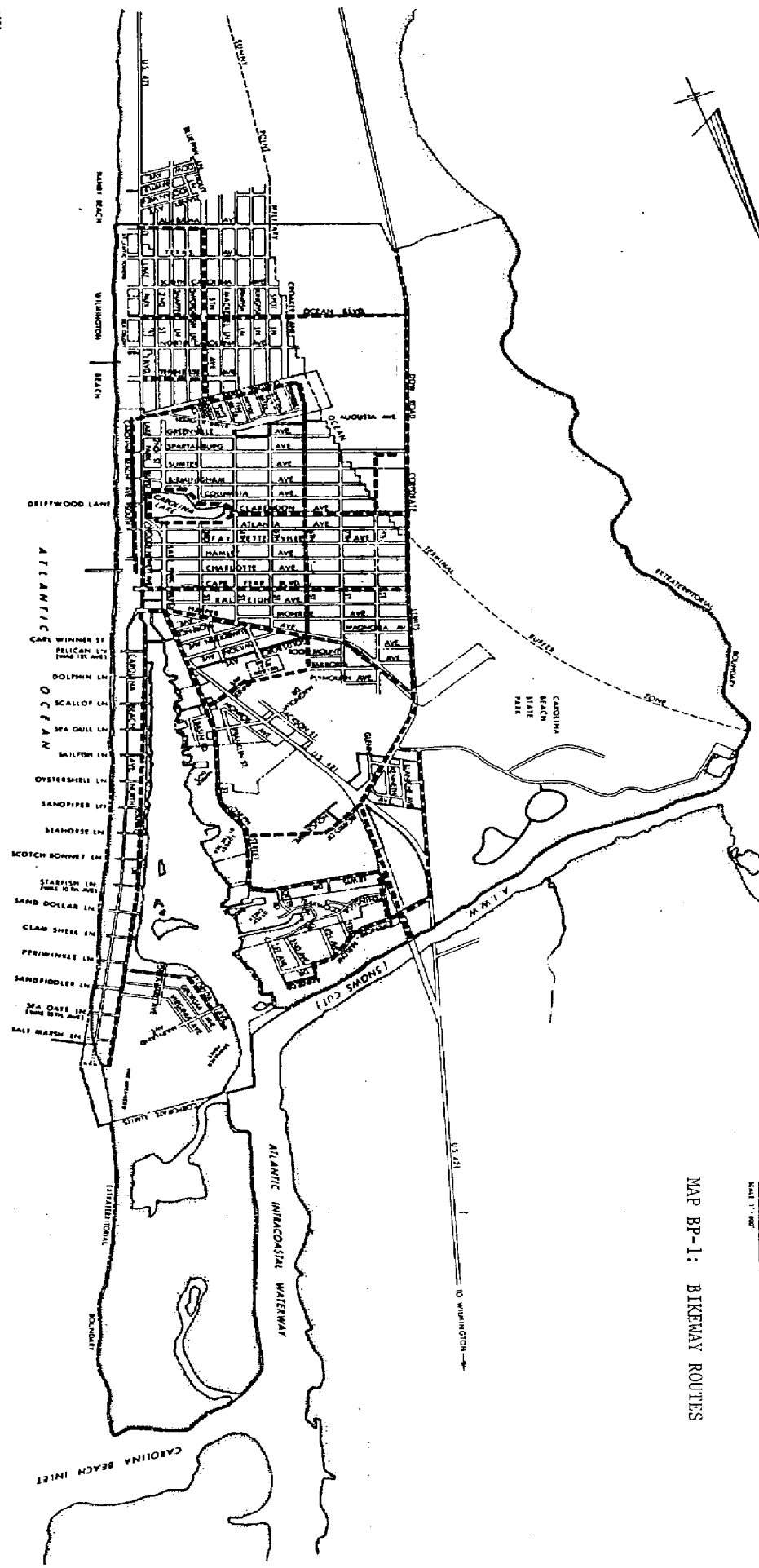
MAP BP-1: BIKEWAY ROUTES



NOTE: INFORMATION OF THIS MAP WAS PROVIDED BY THE TOWN OF CAROLINA BEACH, N.C. AND THE TOWN OF WILMINGTON, N.C. THE TOWN OF CAROLINA BEACH, N.C. HAS PROVIDED THE TOWN OF WILMINGTON, N.C. WITH THE INFORMATION OF THIS MAP. THE TOWN OF CAROLINA BEACH, N.C. HAS PROVIDED THE TOWN OF WILMINGTON, N.C. WITH THE INFORMATION OF THIS MAP. THE TOWN OF CAROLINA BEACH, N.C. HAS PROVIDED THE TOWN OF WILMINGTON, N.C. WITH THE INFORMATION OF THIS MAP.

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STREET NAMES AND CORRELATE LIMITS CORRECT THRU 2000

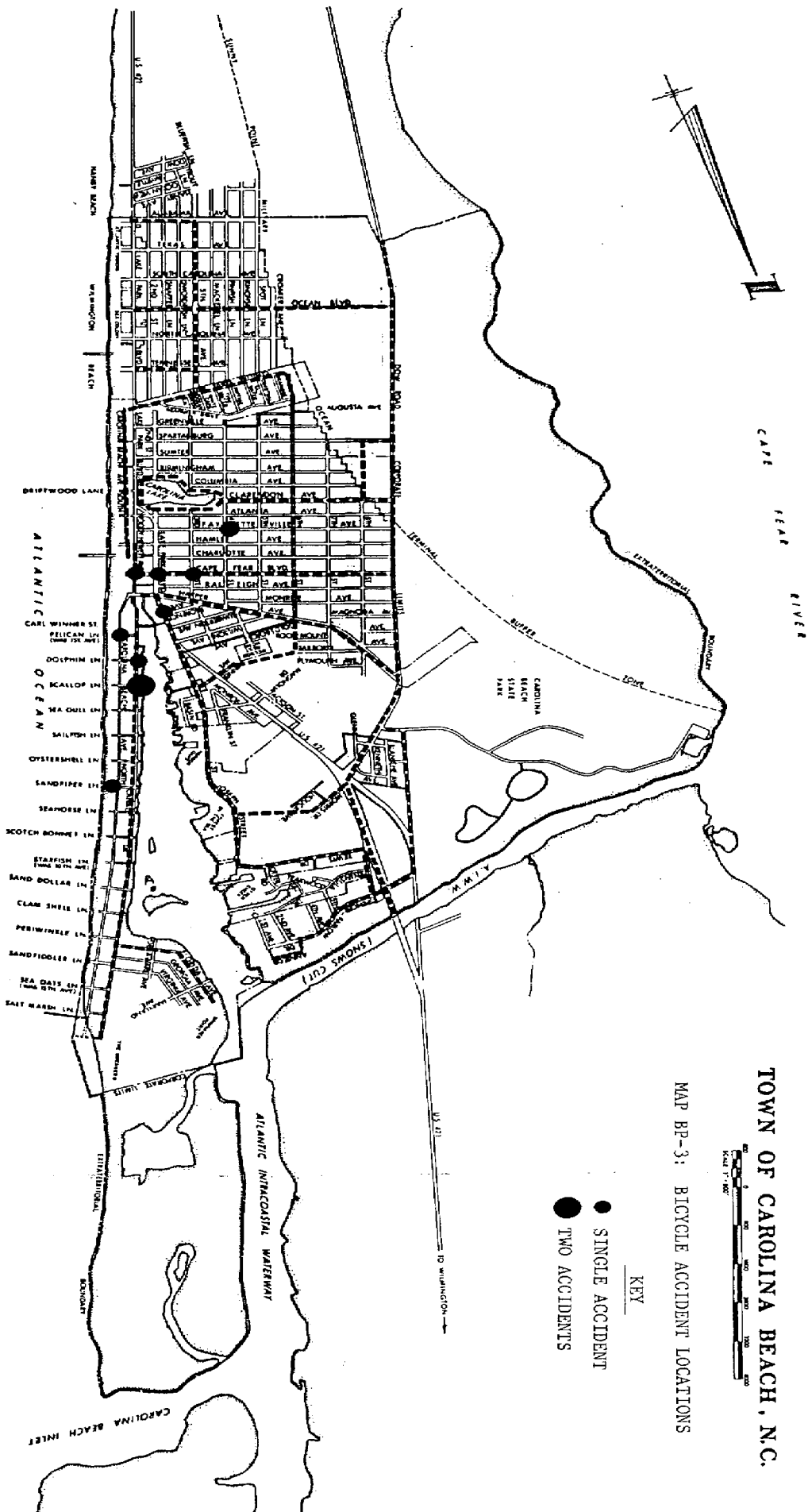




# TOWN OF CAROLINA BEACH, N.C.

MAP BP-3: BICYCLE ACCIDENT LOCATIONS

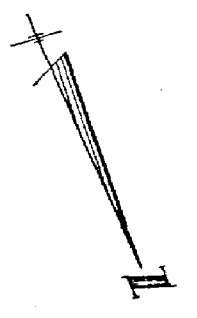
- KEY
- SINGLE ACCIDENT
  - TWO ACCIDENTS



NOTE: The information on this map was prepared in part through the use of aerial photography and other data furnished by the U.S. Army Corps of Engineers, and is not intended to be used for navigation or other purposes. The information on this map is not intended to be used for navigation or other purposes. The information on this map is not intended to be used for navigation or other purposes.

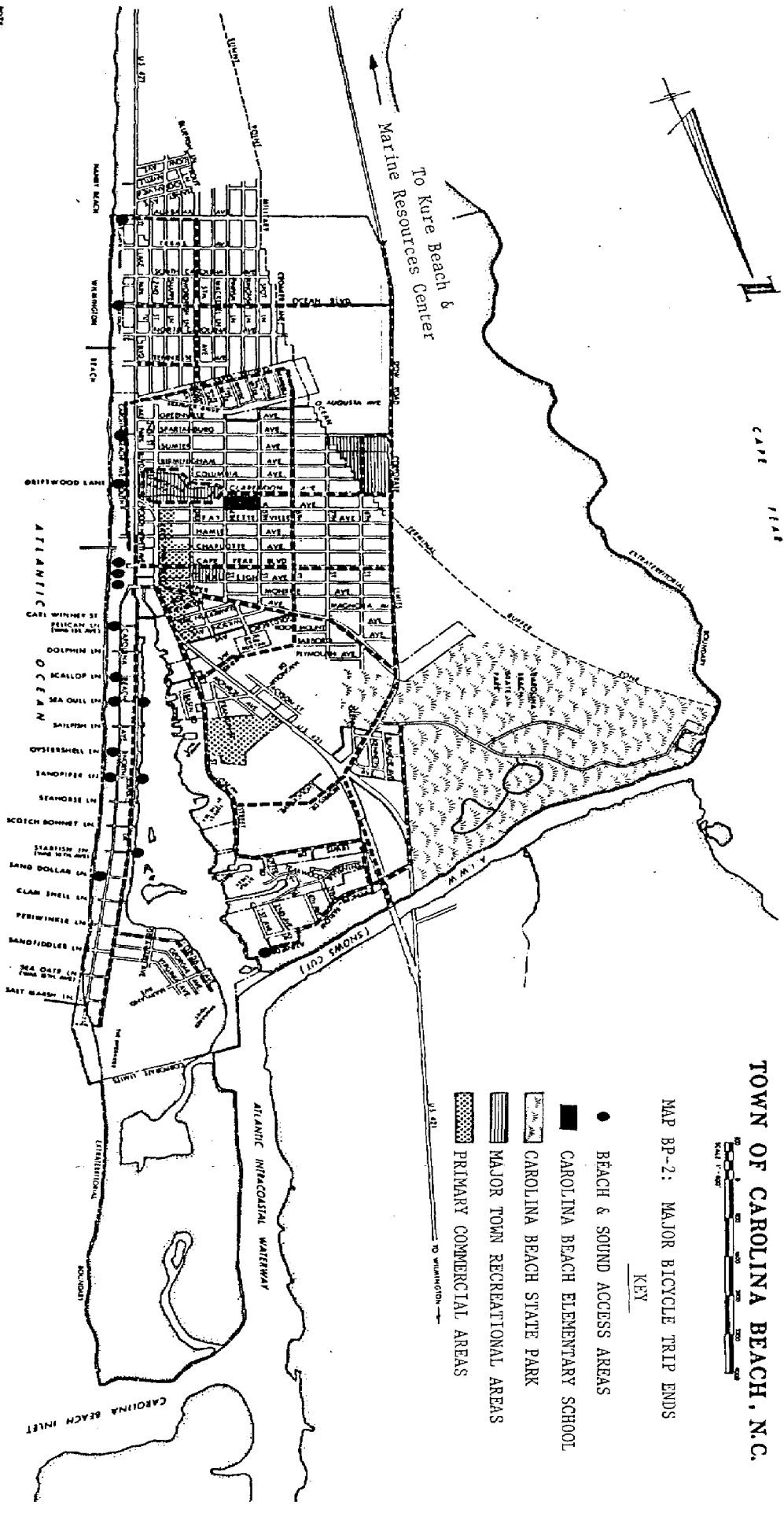
The information on this document was prepared in part through the use of aerial photography and other data furnished by the U.S. Army Corps of Engineers, and is not intended to be used for navigation or other purposes. The information on this map is not intended to be used for navigation or other purposes. The information on this map is not intended to be used for navigation or other purposes.

STREET NAMES AND CORRESPONDING MAPS CORRECT THROUGH 1994



Cape Fear River

To Kure Beach & Marine Resources Center



MAP BP-2: MAJOR BICYCLE TRIP ENDS

KEY

- BEACH & SOUND ACCESS AREAS
- CAROLINA BEACH ELEMENTARY SCHOOL
- ▨ CAROLINA BEACH STATE PARK
- ▨ MAJOR TOWN RECREATIONAL AREAS
- ▨ PRIMARY COMMERCIAL AREAS

THE INFORMATION ON THIS MAP WAS OBTAINED FROM THE TOWN OF CAROLINA BEACH, N.C. AND THE U.S. DEPARTMENT OF COMMERCE, BUREAU OF COAST AND GEODETIC SURVEY. THE TOWN OF CAROLINA BEACH, N.C. IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS THAT MAY APPEAR HEREIN.

THE INFORMATION ON THIS MAP WAS OBTAINED FROM THE TOWN OF CAROLINA BEACH, N.C. AND THE U.S. DEPARTMENT OF COMMERCE, BUREAU OF COAST AND GEODETIC SURVEY. THE TOWN OF CAROLINA BEACH, N.C. IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS THAT MAY APPEAR HEREIN.

STREET NAMES AND COMPANY LIMITS CORRECT THROUGH 1980

# EXISTING AND PROPOSED RECREATIONAL FACILITIES

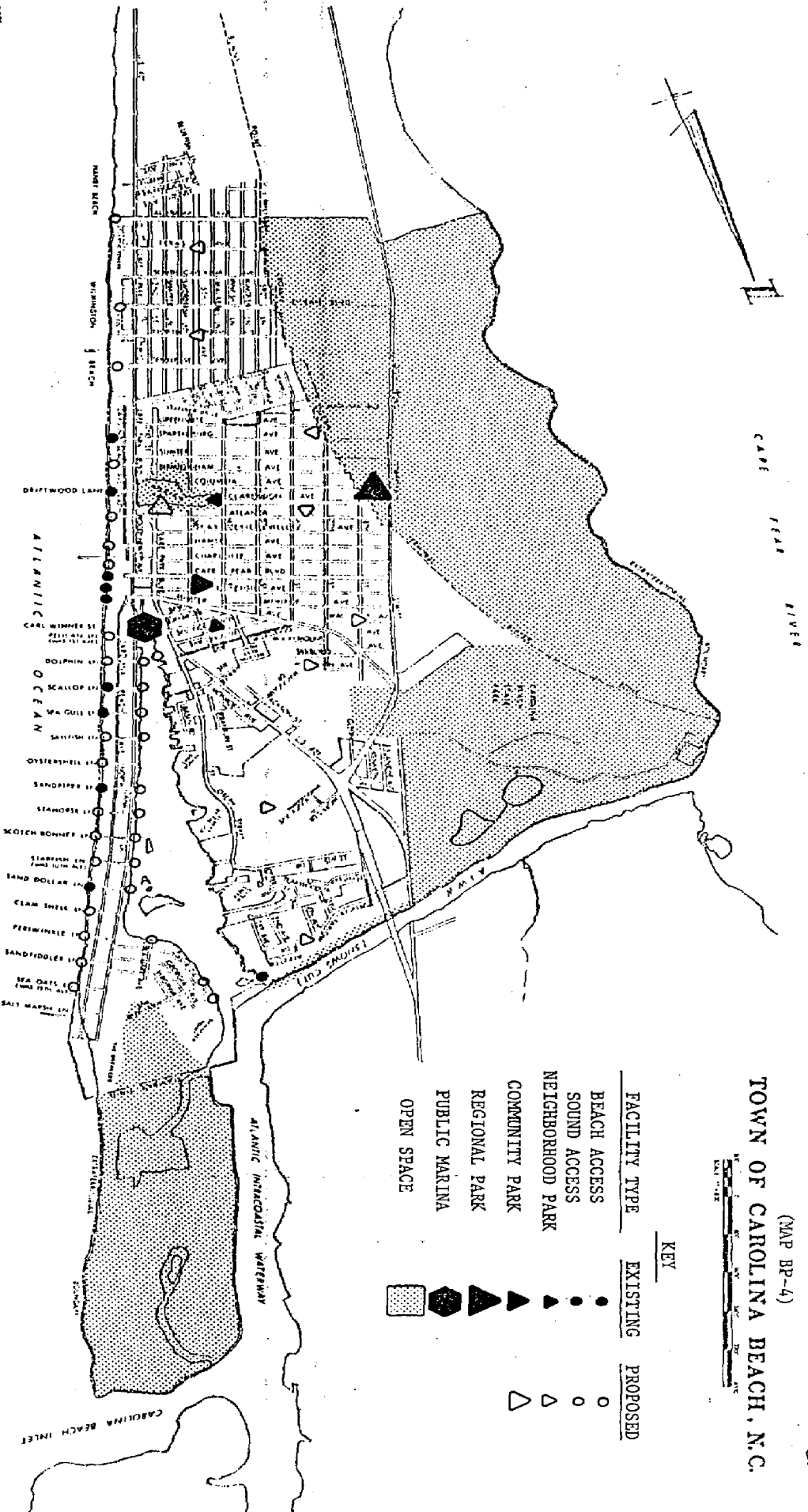
(MAP BP-4)

## TOWN OF CAROLINA BEACH, N.C.



### KEY

FACILITY TYPE	EXISTING	PROPOSED
BEACH ACCESS	●	○
SOUND ACCESS	●	○
NEIGHBORHOOD PARK	▲	△
COMMUNITY PARK	▲	△
REGIONAL PARK	▲	△
PUBLIC MARINA	■	△
OPEN SPACE	■	△



Map prepared by the Town of Carolina Beach, N.C., and the North Carolina Department of Transportation, Division of Planning and Development, Raleigh, N.C., in cooperation with the U.S. Army Corps of Engineers, Wilmington, N.C., and the U.S. Navy, Norfolk, VA.

STREET MAPS AND CONCEPT PLANS, CORP., INC., 1988

APPENDIX 8  
CURRENT PLANS, POLICIES AND REGULATIONS

In addition to this Land Use Plan, the Town of Carolina Beach utilizes the following documents for policy-making and decision-making purposes:

A Development Plan for Carolina Beach	9/1959
Proposed Zoning Ordinance	5/1960
Community Facilities Plan	4/1969
Comprehensive Water & Sewer Plan	9/1971
Zoning Ordinance Revisions (Flood Insurance Regulations)	12/1971
Extraterritorial Jurisdiction Ordinance	6/1972
Zoning Ordinance (Extraterritorial Jurisdiction)	9/1972
Thoroughfare Plan	11/1972
Annexation Feasibility Report	12/1972
Subdivision Regulations	12/1972
Initial Housing Element	4/1973
Commercial Area Improvement Proposal	6/1973
Governmental Management Review	8/1973
Flood Insurance Regulations Ordinance	9/1974
Capital Improvements Budget	1/1975
Land Use Plan	5/1976
Hurricane Evacuation Plan	3/1977
Carolina-Kure 201 Facilities Plan	4/1977
CAMA Implementation & Enforcement Plan	8/1977
Purchasing Policy	11/1978
Water & Sewer Rate Study	1/1979
Personnel Policies and Procedures	2/1979
Position and Pay Classification Plan	5/1979
Solid Waste Management Study	5/1979
Community Facilities Plan & Capital Improvements Budget	7/1979
Vehicle Maintenance Program	7/1979
Codes Modification Study (Flood & CAMA Regulations)	9/1979
Fees and Charges Study	12/1979
Preliminary Engineering Report (Streets & Storm Drainage)	2/1980
Storm Drainage Facilities & Storm Water Mgmt. Ordinance	4/1980
Fixed Asset Inventory	In Progress
Carolina Beach Zoning Ordinance	In Progress
Growth Assessment Study	2/1983
Additions to Hurricane Evacuation Plan	9/1983
Shorefront Access Plan	10/1984
Transportation Improvement Program Project Requests	5/1985
Revisions to Hurricane Evacuation Plan	6/1985
Bikeways Plan	7/1985
Recodification of Town Codes and Ordinances	In Progress
Risk Management Study	In Progress
Personnel Policies & Procedures (revision)	In Progress

In addition to the above documents, studies and plans, the Town enforces the provisions of the following codes and regulations:

Minimum Housing Code  
Sedimentation Control Ordinance (Enforced by New Hanover County)  
Septic Tank Regulations (Enforced by New Hanover County)

N.C. State Building Code, Volume I  
N.C. Uniform Residential Building Code  
N.C. Plumbing Code (Enforced by New Hanover County)  
N.C. Heating Code (Enforced by New Hanover County)  
N.C. State Electrical Code (Enforced by New Hanover County)

The Town also recognizes and/or enforces the provisions of the following State and Federal regulations listed below:

#### STATE LICENSES AND PERMITS

<u>Agency</u>	<u>Licenses and Permits</u>
Department of Natural Resources and Community Development Division of Environmental Management	<ul style="list-style-type: none"><li>- Permits to discharge to surface waters or operate waste water treatment plants; <u>NPDES</u> Permits, (G.S. 143-215)</li><li>- Permits for septic tanks and wastewater collection, treatment and disposal systems (G.S. 143-215.3).</li><li>- Permits for withdrawal of ground waters in capacity use areas (G.S. 143-215.15).</li><li>- Permits for air pollution abatement facilities and sources (G.S. 143-215.108).</li><li>- Permits for construction of a well over 100,000 gallons/day (G.S. 87-88).</li></ul>
Department of Natural Resources and Community Development Division of Coastal Management	<ul style="list-style-type: none"><li>- Permits to dredge and/or fill in estuarine waters, tidelands, etc. (G.S. 113-229).</li><li>- Permits to undertake development in Areas of Environmental Concern (G.S. 113A-118).</li></ul> <p>NOTE: Minor development permits are issued by the local government.</p>

<u>Agency</u>	<u>Licenses and Permits</u>
Department of Natural Resources and Community Development Division of Land Resources	<ul style="list-style-type: none"> <li>- Permits to alter or construct a dam (G.S. 143-215.66).</li> <li>- Permits to mine (G.S. 74-51).</li> <li>- Permits to drill an exploratory oil or gas well (G.S. 113-381).</li> <li>- Permits to conduct geographical exploration (G.S. 113-391).</li> <li>- Sedimentation erosion control plans for any land disturbing activity of over one contiguous acre (G.S. 113A-54).</li> </ul>
Department of Natural Resources and Community Development Secretary of NRCD	<ul style="list-style-type: none"> <li>- Permits to construct an oil refinery.</li> </ul>
Department of Administration	<ul style="list-style-type: none"> <li>- Easements to fill where lands are proposed to be raised above the normal high water mark of navigable waters by filling (G.S. 146.6(c)).</li> </ul>
Department of Human Resources	<ul style="list-style-type: none"> <li>- Approval to operate a solid waste disposal site or facility (G.S. 130-166.16).</li> <li>- Approval for construction of any public water supply facility that furnishes water to ten or more residences (G.S. 130-160.1).</li> </ul>
Army Corps of Engineers (Department of Defense)	<ul style="list-style-type: none"> <li>- Permits required under Sections 9 and 10 of the Rivers and Harbors of 1899; permits to construct in navigable waters.</li> <li>- Permits required under Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972.</li> <li>- Permits required under Section 404 of the Federal Water Pollution Control Act of 1972; permits to undertake dredging and/or filling activities.</li> </ul>

<u>Agency</u>	<u>Licenses and Permits</u>
Coast Guard (Department of Transportation)	<ul style="list-style-type: none"> <li>- Permits for bridges, causeways, pipelines over navigable waters; required under the General Bridge Act of 1946 and the Rivers and Harbors Act of 1899.</li> <li>- Deep water port permits.</li> </ul>
Geological Survey Bureau of Land Management (Department of Interior)	<ul style="list-style-type: none"> <li>- Permits required for off-shore drilling.</li> <li>- Approvals of OCS pipeline corridor rights-of-way.</li> </ul>
Nuclear Regulatory Commission	<ul style="list-style-type: none"> <li>- Licenses for siting, construction and operation of nuclear power plants; required under the Atomic Energy Act of 1954 and Title II of the Energy Reorganization Act of 1974.</li> </ul>
Federal Energy Regulatory Commission	<ul style="list-style-type: none"> <li>- Permits for construction, operation and maintenance of interstate pipelines facilities required under the Natural Gas Act of 1938.</li> <li>- Orders of interconnection of electric transmission facilities under Section 202(b) of the Federal Power Act.</li> <li>- Permission required for abandonment of natural gas pipeline and associated facilities under Section 7C (b) of the Natural Gas Act of 1938.</li> <li>- Licenses for non-federal hydroelectric projects and associated transmission lines under Sections 4 and 15 of the Federal Power Act.</li> </ul>

APPENDIX 9  
PUBLIC PARTICIPATION

The Town of Carolina Beach is very interested in encouraging public participation in all land use and land development policy issues. During the development of this Land Use Plan Update, public participation was encouraged in a number of ways. When modifications and/or additions to the Land Use Plan Update become necessary, public participation will again be sought out.

This Appendix lists the means by which public participation was encouraged and obtained during the development of this document. Following that list are descriptions of the processes which are to be followed for modifications and/or additions to this Land Use Plan Update.

PUBLIC PARTICIPATION: DEVELOPMENT OF LAND USE PLAN UPDATE

The following chart lists the Town boards and meeting dates at which the Land Use Plan Update was publicly discussed. See Appendix 1 for a detailed discussion of how other public input was sought and achieved through the promulgation of a Land Use Survey.

PUBLIC PARTICIPATION

<u>PLAN UPDATE ELEMENT OR COMPONENT</u>	<u>TOWN BOARD</u>	<u>DATE</u>
(1) Natural Resources Element	P/Z	4/04/85
	P/Z	5/02/85
	TC	5/27/85
(2) Economics Element	TC	5/14/85
(3) Recreation Element	PRC	4/24/85
	TC	5/14/85
(4) Traffic Circulation Element	TC	5/27/85
(5) Capital Facilities	TC	8/26/85
(6) Disaster Preparedness	TC	8/26/85
(7) Future Land Use	P/Z	6/06/85
	P/Z	6/20/85
	P/Z	7/11/85
	P/Z	8/08/85
	ZSC	8/06/85
	TC	8/13/85
(8) Appendices*	TC	8/26/85



PUBLIC PARTICIPATION  
(Continued)

<u>PLAN UPDATE ELEMENT OR COMPONENT</u>	<u>TOWN BOARD</u>	<u>DATE</u>
(9) Land Use Survey	P/Z	2/07/85
	TC	2/25/85
	TC	6/24/85
(10) Shorefront Access Plan	TC	9/11/84
(11) Bikeway Plan	TC	7/22/85
(12) Entire Plan Update		
(a) Draft Approval	TC	8/26/85
(b) Final Consideration	TC	4/08/86
(c) Adoption	TC	5/13/86

KEY TO ABBREVIATIONS

P/Z - Planning and Zoning Commission  
PRC - Parks and Recreation Committee  
ZSC - Zoning Study Committee  
TC - Town Council

\* except Land Use Survey; Shorefront Access Plan; and Bikeway Plan

PUBLIC PARTICIPATION: MODIFICATIONS/ADDITIONS TO PLAN UPDATE

There are two types of modifications/additions to the Town of Carolina Beach Land Use Plan Update. The difference between these types of amendments primarily involves the public participation process through which the amendment(s) must be channelled. Each amendment type is discussed below.

Zoning Type Amendment Process

The Future Land Use Element of the Land Use Plan Update establishes site-specific land use categories and classifications. Because the level of detail regarding land uses set forth in that Element constitutes very nearly (and, in some cases, precisely) the establishment of specific zoning map boundaries, it is unrealistic to expect that there will be no modifications to these classifications during the planning horizon of this document.

In order to avoid an unwieldy situation with regard to modifications(s) to these site-specific classifications, it is necessary to shorten and simplify the process by which changes are made to the Future Land Use Element. If the complicated and lengthy Plan Update amendment process described in the following section was to apply to changes to this Element, the Town might find itself very restricted in

approving what could constitute a very minor change in land use or zoning. Furthermore, such an amendment process would involve the State in what are essentially zoning matters; this level of State involvement is opposed by the Town on both philosophical and practical grounds.

Consequently, any modifications to the Future Land Use Element shall be regarded as being similar in type to changes to the Town's Zoning Ordinance, so long as such modifications do not involve changes of such a degree as to constitute an amendment to Map A-2: Land Classification Map and/or alteration to policy statements. Local public participation is achieved through this amendment process since public notice and public hearings are required. The unwieldiness and difficulties with separation of powers between units of government inherent to the following amendment process is also avoided for these entirely local matters.

#### Policy Type Amendment Process

For amendments to the Land Use Plan Update which involve policy statements and/or the Land Classification Map continued in Appendix 4, the following procedure shall be followed, as required by State statutes. (This procedure is quoted directly from the N.C. Administrative Code 07/09/84.)

##### **.0401 LAND USE PLAN AMENDMENT**

The land use plan may be amended as a whole by a single resolution or in parts by successive resolutions. The successive resolutions may address geographical sections, county divisions, or functional units of subject matter.

History Note: Statutory Authority G.S. 113A-110;  
Eff. May 10, 1978.

##### **.0402 PUBLIC HEARING REQUIRED**

(a) The land use plan may be amended only after a properly held public hearing. Notice of public hearing must appear at least 30 days prior to the public hearing and must state the date, time, place, proposed action, and that copies of the amendment may be viewed at a particular office in the county courthouse during designated hours. The notice must appear at least once in a newspaper of general circulation in the county.

(b) When the land use plan subject to amendment is a city land use plan, the amendment shall also be made available during specified hours at a particular office in the town hall or equivalent facility and the public hearing notice shall so state.

(c) Copies of the proposed amendment or update shall be available at the time notice is provided: minor changes after hearing are acceptable without additional meetings unless the changes are so significant that the original notice would not have provided adequate notice to the public of the subject matter and potential action.

(d) Local governments are encouraged to adopt their plan amendments expeditiously following the close of the public hearing.

History Note: Statutory Authority G.S. 113A-110;  
Eff. May 10, 1978;  
Amended Eff. July 1, 1984.

.0403 NOTICE TO COASTAL RESOURCES COMMISSION

(a) The local government proposing a land use plan amendment shall provide to the executive secretary of the CRC or his designee written notice of the public hearing, a copy of the proposed amendment, and the reasons for the amendment 30 days prior to the public hearing. After the public hearing, the executive secretary or his designee shall receive a copy of the amendment as adopted.

(b) The unit of government amending the land use plan shall submit the full text of any proposed amendment in full page units as it would appear in the land use plan if adopted in the proposed form. Any maps (such as the land classification map) that are the subject of the amendment or that will be affected by the amendment shall also be adopted. If the proposed land use plan amendment includes reclassifying an area from a lower intensity land class which does not presently require urban type services to a higher intensity class which will necessitate urban type services, then the local government should describe, as part of the amendment, how, when and where these services will be provided in order to support such a reclassification. If the local government intends to allow private services such as sewage package treatment systems, private garbage pickup, community water systems, etc., then the local government should also discuss how it will ensure these private services will be provided so as to avoid unnecessary future public expenses. Proposed amendments shall be submitted to the executive secretary with the notice of the public hearing.

(c) The executive secretary shall receive a copy of the amended text or maps, or certification of adoption as proposed within seven days after adoption. If the adopted amendment varies from the proposed revision, the adopted amendment shall be submitted in the manner described in (b) of this Rule for proposed amendments.

History note: Statutory Authority G.S. 113A-110;  
Eff. May 10, 1978;  
Amended Eff. July 1, 1984.

.0404 WAIVER OF FORMAL REVIEW BY THE CRC

(a) When the governmental unit amending the land use plan deems the amendment sufficiently insubstantial, it shall request a waiver of the formal amendment procedure when giving notice to the executive secretary. The executive secretary shall make such determination in accordance with specific CRC standards and policy, and mail written notification to the local government no later than two weeks after receipt of notice.

(b) If the waiver is granted and the amendment is adopted as proposed, it shall become final upon local adoption and is not subject to commission review as noted in Rule .0405 of this Section. The executive secretary shall receive certification that the amendment was adopted as proposed within seven days after adoption.

(c) If the waiver is granted and the amendment is not adopted as proposed, the adopted amendment shall be submitted to the executive secretary, shall be subject to commission review as noted in Rule .0405 of this Section, and shall become final only after such commission review.

(d) If the request for waiver is denied by the executive secretary, the waiver provisions of these rules shall not apply. The local amendment finally adopted shall be reviewed by the CRC in accordance with the regular plan amendment process.

History Note: Statutory Authority G.S. 113A-110;  
Eff. May 10, 1978;  
Amended Eff. July 1, 1984.

.0405 CONSISTENCY AND ADOPTION

(a) The amended land use plan must remain consistent with 15 NCAC 7B, Land Use Planning Guidelines, and 15 NCAC 7D, Generally Applicable Standards of Review, and adjacent city or county plans.

(b) The Coastal Resources Commission shall review locally adopted land use plan amendments that are not subject to the waiver provisions at the first regularly scheduled meeting held after the executive secretary has received notification of local adoption, provided adequate time exists to determine the sufficiency of the amendment. If adequate time is not available for review of the amendment, the local government shall be advised in writing by the executive secretary of the date at which the commission anticipates review of the

History note: Statutory Authority G.S. 113A-110;  
Eff. May 10, 1978;  
Amended Eff. July 1, 1984.

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(c) If the waiver is granted and the amendment is not adopted as proposed, the adopted amendment shall be submitted to the executive secretary, shall be subject to commission review as noted in Rule .0405 of this Section, and shall become final only after such commission review.

(d) If the request for waiver is denied by the executive secretary, the waiver provisions of these rules shall not apply. The local amendment finally adopted shall be reviewed by the CRC in accordance with the regular plan amendment process.

History Note: Statutory Authority G.S. 113A-110;  
Eff. May 10, 1978;  
Amended Eff. July 1, 1984.

.0405 CONSISTENCY AND ADOPTION

(a) The amended land use plan must remain consistent with 15 NCAC 7B, Land Use Planning Guidelines, and 15 NCAC 7D, Generally Applicable Standards of Review, and adjacent city or county plans.

(b) The Coastal Resources Commission shall review locally adopted land use plan amendments that are not subject to the waiver provisions at the first regularly scheduled meeting held after the executive secretary has received notification of local adoption, provided adequate time exists to determine the sufficiency of the amendment. If adequate time is not available for review of the amendment, the local government shall be advised in writing by the executive secretary of the date at which the commission anticipates review of the

amendment. Public comments are invited during the CRC review of the proposed plan amendment.

- (1) The CRC shall approve, disapprove or conditionally approve any local land use plan amendment it is reviewing.
- (2) If the amendment is disapproved or conditionally approved, the reasons for such action shall be explained to the local government with suggestions as to how the amendment might be changed so approval could be granted.
- (c) Failure of the CRC to take negative action at its first regularly scheduled meeting after notification to the executive secretary of the adopted amendment indicates compliance with these standards and commission approval of the amendment.
- (d) Any final amendments to the text or maps of the land use plan shall be incorporated in context in the land use plan and shall be dated to indicate the date the amendment became final. The amended land use plan shall be maintained as required by G.S. 113A-110(g).

History Note: Statutory Authority G.S. 113A-110;  
Eff. May 10, 1978;  
Amended Eff. July 1, 1984.

.0406 STANDARDS FOR WAIVER OF FORMAL REVIEW

The executive secretary's authority to waive formal review of proposed land use plan amendments is limited to the following instances:

- (1) minor changes in policy statements or objectives that are the result of public participation,
- (2) modification of any classification that does not affect transition or conservation classes,
- (3) new data compilations and associated statistical adjustments that do not suggest major substantive revisions,
- (4) more detailed identification of **existing land uses or additional** maps of existing or natural conditons,
- (5) identification of fragile areas to be brought under locally initiated protection,
- (6) changes in land classifications to reflect new designations or deletions of AEC's,

- (7) changes certified by the executive secretary to be consistent with specific CRC comments.

History Note: Statutory Authority G.S. 113A-110;  
Eff. May 10, 1978.

APPENDIX 10  
SUPPLEMENT  
TO  
NEW HANOVER COUNTY  
1977  
HURRICANE EVACUATION PLAN



SUPPLEMENT  
TO  
NEW HANOVER COUNTY  
HURRICANE EVACUATION PLAN  
  
DISASTER EVACUATION OPERATION PLAN  
CAROLINA BEACH POLICE DEPARTMENT  
CAROLINA BEACH, NORTH CAROLINA  
NEW HANOVER COUNTY

DISASTER OPERATION CENTER:

CAROLINA BEACH POLICE DEPARTMENT  
CAROLINA BEACH CITY HALL  
CORNER OF CANAL DRIVE & CARL WINNER AVENUE

ALL PUBLIC RECORDS WILL BE MOVED TO A SAFE BUILDING IN WILMINGTON  
BY U-HAUL TRUCKS.

ALTERNATE DISASTER OPERATION CENTER:

IN THE EVENT OF HIGH WATER, THE DISASTER OPERATION CENTER WILL  
BE MOVED TO THE FEDERAL POINT MEDICAL CENTER, WHICH IS THE  
ALTERNATE DISASTER OPERATION CENTER.

IN THE EVENT OF A DISASTER AND THE MAYOR ORDERS THE EVACUATION  
OF THE ISLAND, ALL RESIDENTS AND PROPERTY OWNERS WITHIN THE  
TOWN LIMITS AND SATELITE AREAS MUST HAVE A CAROLINA BEACH CITY  
LICENSE TAG OR SHOW OTHER PROPER IDENTIFICATION AT THE MAIN  
CHECK POINT, FEDERAL POINT MEDICAL CENTER, U.S. HWY. 421, BEFORE  
REENTRY TO THE ISLAND.

IN THE EVENT OF AN EVACUATION, THE COORDINATION OF EXITING  
TRAFFIC WILL BE AT VARIOUS CHECK POINTS LISTED:

TRAFFIC CHECK POINTS:

CARL WINNER AVENUE & U.S. 421  
HARPER AVENUE & U. S. 421  
CAPE FEAR BLVD. & U. S. 421  
SPARTANBURG AVENUE & U. S. 421  
DOW ROAD & U. S. 421  
DOW ROAD & SPENCER FARLOW DRIVE

EACH CHECK POINT WILL BE MANNED BY A POLICE OFFICER WHO WILL DIRECT EVACUATING MOTORIST INTO WHICH LANE OF TRAFFIC TO ENTER, AND REMAIN IN UNTIL THEIR DEPARTURE FROM THE ISLAND.

A TASK FORCE MADE UP OF VOLUNTEERS, COORDINATED BY THE CHIEF OF POLICE, WILL EVACUATE THE HANDICAP AND PATIENTS FROM NEILSON REST HOME, LOCATED AT 4th STREET NORTH AND GOLDSBORO AVENUE.

DISASTER EVACUATION ROUTE

TOWN OF CAROLINA BEACH

ROUTES OF TRAVEL TO SHELTERS

HOGGARD HIGH SCHOOL:

Travel north on U.S. 421 to intersection N.C. 132. Continue north on N.C. 132 to Shipyard Blvd., Wilmington. Turn left on Shipyard Blvd. to Hoggard High School.

ROLAND-GRISE JUNIOR HIGH SCHOOL:

Travel north on N.C. 132. Turn left on Lake Avenue, before intersection of U.S. 76 [Oleander Drive] Wilmington, to Roland-Grise School.

## " A " S E C T O R

All traffic on the NORTHERN EXTENSION, which will include:

Carolina Avenue North	Carl Winner Avenue	Seahorse Lane
Canal Drive	Myrtle	Scotch Bonnet Lane
Virginia Avenue	Pelican Lane	Starfish Lane
Georgia Avenue	Dolphin Lane	Sand Dollar Lane
Florida Avenue	Scallop Lane	Clam Shell Lane
Maryland Avenue	Sea Gull Lane	Periwinkle Lane
Delaware Avenue	Sailfish Lane	Sandfiddler Lane
Spinkaker Pt. Sub-Div.	Oystershell Lane	Sea Oats Lane
	Sandpiper Lane	Salt Marsh Lane

All traffic on CAROLINA AVENUE NORTH will travel north on Carolina Avenue to SALT MARSH LANE. Turn left onto CANAL DRIVE, traveling south.

All cross over LANES between CAROLINA AVENUE NORTH and CANAL DRIVE will travel north on CAROLINA AVENUE NORTH to SALT MARSH LANE. Turn left onto CANAL DRIVE, traveling south.

All traffic on CANAL DRIVE, FLORIDA AVENUE, GEORGIA AVENUE, VIRGINIA AVENUE, MARYLAND AVENUE, DELAWARE AVENUE and SPINAKER POINT, will travel south on CANAL DRIVE.

ALL TRAFFIC ON THE NORTHERN EXTENSION, will turn right onto CARL WINNER AVENUE, traveling west to U.S. 421.

Turn right onto U.S. 421, traveling north.

Exit the island to chosen shelter.

## ALTERNATE ROUTE FOR "A" SECTOR

If there is a high water problem on CANAL DRIVE, the alternate plan will be as follows:

ALL NORTHERN EXTENSION TRAFFIC will travel to CAROLINA AVENUE NORTH. Turn south on CAROLINA AVENUE, and travel to HARPER AVENUE. Cross CANAL DRIVE and travel west on HARPER AVENUE TO U.S. 421.

Turn right onto U.S. 421, traveling north.

Exit the island to chosen shelter.

" B "    S E C T O R

All residents EAST OF U. S. 421, from HARPER AVENUE south to ATLANTA AVENUE, which will include:

Carolina Sands [Sub-Div.]

Boardwalk Traffic

Carolina Avenue South

Sea Colony

Charlotte Avenue

Atlantic Towers

Hamlet Avenue

Salty Hammock

All CROSS STREETS between U. S. 421 and CAROLINA AVENUE SOUTH and LAKE PARK BLVD. SOUTH [U.S. 421]

All traffic on CAROLINA AVENUE SOUTH, will travel south to SPARTANBURG AVENUE, travel west to U. S. 421, turn right onto U. S. 421, traveling north. Exit the island to chosen shelter.

All CROSS OVER STREETS AND AVENUES, EAST OF U. S. 421 will travel to U. S. 421, turn right, traveling north. Exit the island to chosen shelter.

ALTERNATE ROUTE "B" SECTOR

If water is high at Carolina Beach Lake and U. S. 421, ALL TRAFFIC IN SECTOR "B", SOUTH OF THE LAKE will travel to SPARTANBURG AVENUE by way of CAROLINA AVENUE SOUTH.

ALL TRAFFIC will cross U. S. 421, travel west on SPARTANBURG AVENUE to 4th STREET.

Turn right onto 4th STREET, traveling north to CAPE FEAR BLVD.

Turn right onto CAPE FEAR BLVD, traveling east to U. S. 421.

Turn left onto U. S. 421, traveling north.

Exit the island to chosen shelter.

All BOARDWALK TRAFFIC will travel to U. S. 421. Turn right, traveling north. Exit the island to chosen shelter.

All CAROLINA SANDS Sub-Division will travel to U. S. 421. Turn left onto U. S. 421, traveling north. Exit the island to chosen shelter.

" C "     S E C T O R   -   S O U T H

) All Avenues and Streets south of CLARENDON AVENUE , which will include:

Clarendon Avenue

Augusta Avenue

Columbia Avenue

Spartanburg Avenue

Birmingham Avenue

Sumter Avenue

Greenville Avenue

2nd, 3rd, 4th, 5th, 6th, and 7th Streets, south of CLARENDON AVENUE.

All traffic on CLARENDON AVENUE, and residents south of CLARENDON AVENUE, on above listed AVENUES and STREETS will travel to SPARTANBURG AVENUE.

Travel east on SPARTANBURG AVENUE TO U. S. 421.

Turn left onto U. S. 421, traveling north.

Exit the island to chosen shelter.

ALTERNATE ROUTE "C" SECTOR

) All traffic from CLARENDON AVENUE and residents south of CLARENDON AVENUE, which will include:

Clarendon Avenue

Augusta Avenue

Columbia Avenue

Spartanburg Avenue

Birmingham Avenue

Sumter Avenue

Greenville Avenue

2nd, 3rd, 4th, 5th, 6th, and 7th Streets, south of CLARENDON AVENUE,

will travel to 5TH STREET, traveling north to CAPE FEAR BLVD.

Turn right onto CAPE FEAR BLVD, traveling east to U. S. 421.

Turn left onto U. S. 421, traveling north.

Exit the island to chosen shelter.

" C "     S E C T O R   -   N O R T H

All traffic from ATLANTA AVENUE, north to CAPE FEAR BLVD, which will include:

Atlanta Avenue

Cape Fear Blvd.

Fayetteville Avenue

Hamlet Avenue

Charlotte Avenue

All STREETS from ATLANTA AVENUE, north to CAPE FEAR BLVD:

3rd, 4th, 5th, 6th, 7th, and 8th Streets

All traffic will travel to CAPE FEAR BLVD.

Turn right onto CAPE FEAR BLVD., traveling east to U. S. 421.

Turn left onto U. S. 421, traveling north.

Exit the island to chosen shelter.

All traffic from CAPE FEAR BLVD., north to HARPER AVENUE, which will include:

Harper Avenue

Magnolia Avenue

Raleigh Avenue

Rocky Mount Avenue

Monroe Avenue

Tarboro Avenue

All STREETS north of CAPE FEAR BLVD. to HARPER AVENUE:

3rd, 4th, 5th, 6th, 7th, and 8th Streets

All traffic will travel to HARPER AVENUE.

Turn right onto HARPER AVENUE, traveling east to U. S. 421.

Turn left onto U. S. 421, traveling north.

Exit the island to chosen shelter.

" C "   S E C T O R   -   H A M B Y   B E A C H   &   W I L M I N G T O N   B E A C H

All traffic from HAMBY BEACH & WILMINGTON BEACH, which will include:

Tennessee Avenue	Hamby Avenue
North Carolina Avenue	Ocean View Avenue
Ocean Blvd.	Myrtle Avenue
South Carolina Avenue	Dow Avenue
Georgia Avenue	U. S. Hwy. 421
Alabama Avenue	

All NUMBERED AVENUES: 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th, 10th, and 11th Avenues.

All traffic from HAMBY BEACH & WILMINGTON BEACH, will travel the nearest route to OCEAN BLVD, which will be the main road to the evacuation route.

Turn onto OCEAN BLVD, traveling west to DOW ROAD.

Turn right onto DOW ROAD, traveling north to U. S. 421 .

Exit the island to chosen shelter.



" D "     S E C T O R   -   S O U T H

All traffic north of HARPER AVENUE to GOLDSBORO AVENUE, which will include:

Rocky Mount Avenue

Tarboro Avenue

7th Street

8th Street

Plymouth Avenue

All traffic on these STREETS and AVENUES will travel to 7th AVENUE, traveling south to HARPER AVENUE.

Turn left onto HARPER AVENUE, traveling east to U. S. 421.

Turn left onto U. S. 421, traveling north.

Exit the island to chosen shelter.

All traffic north of HARPER AVENUE to GOLDSBORO AVENUE, which will include:

Florence Avenue

Goldsboro Avenue

Lumberton Avenue

3rd Street

Wilson Avenue

4th Street

All traffic on these STREETS and AVENUES will travel to 3rd STREET, traveling south on 3rd to HARPER AVENUE.

Turn left onto HARPER AVENUE, traveling east to U. S. 421.

Turn left onto U. S. 421, traveling north.

Exit the island to chosen shelter.

" D "     S E C T O R   -   N O R T H

All traffic on ST. JOSEPH STREET, and including the following STREETS:

Burris Road	Monroe Avenue
Yacht Road	Franklin Avenue
Basin Road	Lewis Road
Winner Avenue	Otter Road

All traffic in PLEASURE CAY Sub-Division, which will include:

Teakwood Drive	Annie Drive
Peninsula Drive	1st Avenue
Tahiti Court	2nd Avenue
Spenser Farlow Drive	4th Avenue

All traffic in the following CONDOMINIUM COMPLEXES:

Inland Harbor	Harbor Oaks
Forest By The Sea	Pleasure Island Plaza
Riparian Yacht & Tennis Club	Otter Creek

All traffic from the above listed will travel onto ST. JOSEPH STREET, traveling north to LEWIS ROAD.

All traffic, including LEWIS ROAD, will turn into PLEASURE CAY Sub-Division onto OTTER ROAD.

All traffic plus OTTER CREEK and PLEASURE CAY will travel TEAKWOOD DRIVE to PENINSULA DRIVE, traveling north on Peninsula Drive to SPENCER FARLOW DRIVE.

Turn left onto SPENCER FARLOW DRIVE, traveling west under Snows Cut Bridge to DOW ROAD intersection at Federal Point Medical Center.

Turn left onto DOW ROAD, traveling east to U. S. 421.

Turn left onto U. S. 421, traveling north.

Exit the island to chosen shelter.

All traffic on SPENCER FARLOW DRIVE, and including:

Annie Drive	2nd Avenue
1st Avenue	4th Avenue

Will travel SPENCER FARLOW DRIVE, traveling south to DOW ROAD, to U. S. 421, traveling north.     Exit the island to chosen shelter.

" D "     S E C T O R   -   W E S T

All CAROLINA BEACH STATE PARK traffic and DAVIS MOBILE HOME PARK traffic will travel to DOW ROAD.

Turn left onto U. S. 421, traveling north.

Exit the island to chosen shelter.

All traffic on BLANCH AVENUE, KENNETH AVENUE AND GLENN AVENUE will travel to DOW ROAD.

Turn left onto U. S. 421, traveling north.

Exit the island to chosen shelter

" D "     S E C T O R   -   E A S T

All traffic on MORRIS DRIVE and HOUCK AVENUE will travel to U. S. 421.

Turn right onto U. S. 421, traveling north.

Exit the island to chosen shelter.

Additions to Carolina Beach Supplement to  
New Hanover County Hurricane Plan, adopted  
by Town Council, September 8, 1983

"E" Identification System for residents residing on Pleasure Island

The purpose for the identification system is so that all residents, on the island can be identified according to the areas in which they reside, (Carolina Beach, Kure Beach, or county residents at Hanby Beach and Wilmington Beach. All residents on the island can be issued a numbered decal about 3" in diameter which will be affixed on the left side of the windshield above the vehicle inspection decal. The decals will be three (3) different colors for the residents in various areas as shown below:

Carolina Beach residents will have light blue decals  
Kure Beach residents will have red decals  
County residents will have green decals

The decals for Carolina Beach residents can be obtained at the Carolina Beach Police Department.

County residents on the island can obtain their decals from the Sheriff's Department, LEC Wilmington, N. C., or where the Sheriff may desire to have the decals issued.

"F" Restrictions returning to the island during a Hurricane and after a Hurricane

Once the island has been evacuated, no one will be allowed to return until the Mayor of the Town of Carolina Beach has declared that a state of emergency no longer exists. This is to prevent looting of homes, businesses, and to protect people from fallen power lines, and etc.

The enforcement of the restriction relating to all island residents will be accomplished by placing Law Enforcement representatives of all three agencies concerned at a designated roadblock, when such restrictions are ordered.

No sightseers will be allowed on the island until all electrical power has been restored. This is to keep sightseers from interfering with Carolina Power and Light Company employees while they are in the process of restoring electricity.

Contractors and other repair personnel will be allowed on the island to perform needed repair services.

"G" Truck for Evacuation Purposes

The U-Haul representative, Curtins Downtown Texaco, Wilmington, N. C., will provide U-Haul trucks when needed for Hurricane Evacuation. According to the U-Haul representative, the drivers of the rental trucks must be licensed and employed by the Town of Carolina Beach (police or public works employees), the town will be charged for the period the U-Haul trucks are used and payment will be made by the town as soon as possible after the emergency ended. The trucks will be used to store and relocate to a safe area, Town records, computers, and other equipment designated by the Town Manager.

"H" Housing - Food - Shelter

The Hurricane Evacuation Coordinator will make arrangements to house National Guard Troops and other outside emergency personnel at designated locations. Arrangements will also be made to procure needed food and sleeping bags or cots for Town employees that are required to be on a 24 hour standby during Hurricane conditions.

"I" The Fire Department will perform the following:

The Fire Chief upon being notified of a Hurricane Warning will order the 34 man volunteer Fire Department on 24 hour standby alert. The 4 Fire Department vehicles equipped with loud speakers and sirens, upon notification of the Mayor to evacuate, will assist the Police Department in publicly announcing the evacuation of the residents from the Town of Carolina Beach.

During Hurricane conditions, the fire department will standby for any fire or other emergency calls.

"J" The Town Utilities Department will perform the following:

Check all small engines for oil and gas:

- (A) Mud Pumps
- (B) Road Cutters
- (C) Generator
- (D) Well Point System

Check all rain gear:

- (A) Coats
- (B) Pants
- (C) Boots
- (D) Hard Hats

Check all vehicles for gas and oil.  
Make preparations for obtaining extra gas.

Set up base station for crew:

- (A) Communications
- (B) Shelter
- (C) Prepare kitchen with supplies

Assign shifts to allow for sleep time and duty time if possible.

Secure all loose equipment and if possible, find shelter for all emergency equipment.

Release men from duty as soon as all emergency alerts are lifted.

Maintenance Department

In case of Hurricane Watch all emergency equipment should be tested and refueled.

Supplies such as needed in an actual emergency (i.e., batteries, jumper cables, etc.) shall be restocked and ready.

Any loose equipment or supplies should be secured.

In Case of Hurricane Warning:

Final equipment (such as food, cots, locations), shall be finalized.

Water tank and reservoir topped off. Possibly extra wells and reservoir put in line to maintain top levels. Possibly put transfer pump in line by pressure requirements.

Sewage pumps put to one (1) pump only (per lift station) status.

Reconstruction:

Assessment of damages to key water and sewer facilities.

Water restoration first priority.

Sewer restoration second priority.

K" The Public Works Department

The Public Works Department will perform the following functions prior to, during, and after a hurricane.

Make available needed tools such as chainsaws, and other needed equipment, to be used to clear the streets.

Assist the hurricane coordinator in obtaining cots and blankets for 24 hour standby emergency personnel.

To obtain an auxiliary generator to be used at the alternate command post. (Pleasure Island Rescue Squad)

Secure public works buildings to make them as safe as possible so that they can be used to store trucks and other emergency equipment.

"L" The Town Planner will perform the following functions:

Contact the Disaster Assessment Team, a group of local realtors, who have volunteered to help assess hurricane damages, for final organizational functions.

Assist the Hurricane Evacuation coordinator in purchasing emergency rations for the Town staff, according to a pre-established list and transport these rations to the Town's emergency operations center.

Serve as assistant to the Town Manager and Chief of Police as needed.

"M" The Town Inspection Department will perform the following:

At the outset of the hurricane watch, all vehicles will be fueled and made ready. All staff persons will be placed on call with full rain gear and boots. In the event a warning was issued, or upon command of the Town Manager all valuable records and equipment would be relocated to safe quarters to prevent possible damage or destruction. The Inspection Department would be available to assist other departments, such as the Fire or Police Departments with evacuation. The Inspection Department would also be available for other tasks. Following the hurricane, the Inspection Department will assist with the initial evaluation to determine safety to life conditions in order to advise the command post. After this phase, the main duties will be related to coordinating and working with the assessment team on damages. Ultimately, the department would be available for just about any task that needs to be performed and would assist the Town Manager, Mayor, and Police Chief as needed.

"N" The Parks and Recreation Director will perform the following functions Prior to a Hurricane

Gas and check all Department Head's vehicles in City Hall, except Police and Fire.

Hand out all lifeguard radios and emergency equipment, including first aid kits, to all emergency personnel.

Deliver mats to designated sleeping area locations.

Prior to and during, serve as Shelter/EOC Coordinator.

"O" Wastewater Treatment Plant

Hurricane Watch

Is posted, all outdoor objects secured, and emergency generator will be checked for fuel and operation including changeover controls.

Hurricane Warning

Is posted, chlorine bottles will be put inside, as the hurricane proceeds in our direction (within eight (8) hours) of striking the area. The samplers and lines will be put inside, the chlorination system will be cut off. The flow will be switched to the holding basin at an appropriate time, the bridges will be cut off, facing appropriate direction, at an appropriate time, and the generator will be switched over to its power and the propane tank will be cut off.

Reconstruction

- (1) Chlorination systems cut back on.
- (2) Bridges cut back on.
- (3) Flow switch back to normal operation.
- (4) Reset samplers.
- (5) Cut propane tank back on.
- (6) Check for damages.
- (7) Normal operation.



APPENDIX 11

RECLASSIFICATION REQUEST FOR MYRTLE GROVE SOUND

The following Position Statement outlines the purpose behind the recent (11-25-85) request by the Town of Carolina Beach for State reclassification of the water quality rating of Myrtle Grove Sound south of Snow's Cut.

POSITION STATEMENT  
TOWN OF CAROLINA BEACH APPEAL FOR WATER QUALITY  
RECLASSIFICATION OF MYRTLE GROVE SOUND

EXECUTIVE SUMMARY: The Town of Carolina Beach strongly supports environmentally-sound land use policies promulgated by all levels of government. The Town also recognizes that well-reasoned compromises between economic and environmental issues must often be made; these tradeoffs constitute a cornerstone of the Coastal Area Management Act. It is the Town's position that the current State classification of Myrtle Grove Sound south of Snow's Cut represents a failure to balance the questionable environmental benefits of severely restricting developmental land uses adjacent to the Sound with the substantial economic costs. The Town, therefore, is pursuing water quality reclassification of Myrtle Grove Sound.

The waters of Myrtle Grove Sound are currently classified SA by the State of North Carolina. This water quality classification indicates that the highest and best use of the waters is commercial shellfishing. The SA classification carries with it strict standards regarding stormwater runoff and other pollutant levels in order to protect commercial shellfishing beds. The classification is generally reserved for the State's most pristine water bodies.

When Myrtle Grove Sound was assigned its first water quality classification by the State in 1959, the classification was established as SC based upon the Pollution Survey Report #6 by the State Stream Sanitation Committee which characterized the Myrtle Grove Sound water condition as "Natural, Slight Pollution." The report indicated that the best use of these waters was for fishing, and that the appropriate classification was SC.

This SC classification lasted until August 9, 1981, when it was changed to SA. The change in water quality classification occurred despite considerable urban development upon the lands adjacent to Myrtle Grove Sound in the years between 1959 and 1981. Use of the Sound for commercial shellfishing since 1981 has been extremely limited; in fact, since reclassification, the waters have always been closed to shellfishing by the State Office of Shellfish Sanitation.

What has occurred as a result of the reclassification is that urban development along Myrtle Grove Sound has faced serious restrictions. Attached are two letters which illustrate problems that developers have encountered as a direct result of the existing classification. Both of these developments were in conformance with all applicable Town ordinances at the time permission to build was sought from the State.

Because of these conflicts with local ordinances, the Town staff initiated study of the situation. This research has determined that Myrtle Grove Sound is an estuarine system which is subject to minimal pollutant flushing through tidal flow or wind action. The Sound serves as a major receiving body for two of the Town's three drainage basins; these two basins encompass the source of almost all of the Town's urban stormwater runoff.

The concentration of pollutants in the Sound is a well-known and well-documented condition existing at least since 1959; it may very well have been a condition which existed prior to any shoreline development due to the "dead-end" configuration of the Sound. Certainly the only waters into which Myrtle Grove Sound flows, and which also regularly flow into Myrtle Grove Sound, (Snow's Cut) are classified SC by the State.

These circumstances combine to severely restrict the usefulness of the Sound for commercial shellfish harvesting. It is also unlikely that any restrictions placed on development to achieve the above purpose will result in improved water quality conditions due to the existing environmental and geologic configuration of the estuarine system. As a consequence, urban development of the shoreline is being needlessly restricted by State permitting agencies.

Further, the control that the Town of Carolina Beach exercises over the Myrtle Grove Sound shoreline is also being needlessly restricted. Land use arrangements encouraged by the Town's Zoning Ordinance and proposed Land Use Plan Update are being discouraged by State regulations. Development of the lands adjacent to Sound, which is judged to be of great economic importance to the Town's two primary industries (tourism and commercial fishing), has been severely restricted despite questionable environmental benefits from the restrictions.

Finally, the existing classification subverts the central guiding policy of the Coastal Area Management Act (CAMA). The Town contends that the highest and best use of Myrtle Grove Sound involves economic issues. Only clear-cut environmental benefits should divert use of the Sound from otherwise ecologically-acceptable development levels. As Thomas J. Schoenbaum has stated regarding CAMA:

"The central concept of the law is its view of the lands and waters of the coastal zone as a resource which must be allocated among different uses." Managing coastal resources, Schoenbaum states, depends upon "... a detailed and systematic identification of the eco-systems and resources of the coastal area and the relative capability of the land and waters to withstand development. Priorities of uses can thus be assigned to different categories of lands and waters; developmental uses can be

given priority in certain areas while preservation  
uses are paramount in other (areas)." (T.J. Schoenbaum;  
"The Management of Land and Water Uses in the Coastal  
Zone: A New Law is Enacted in North Carolina";  
The N.C. Law Review; vol. 53; December, 1974)



State of North Carolina  
Department of Natural Resources and Community Development  
Wilmington Regional Office

James G. Martin, Governor

S. Thomas Rhodes, Secretary  
DIVISION OF ENVIRONMENTAL MANAGEMENT

March 26, 1985

Mr. Dennis Lennert, AIA  
3805 Cherry Ave.  
Wilmington, North Carolina 28403

Subject: 401 Certification Review  
H. C. Stanley Project  
Carolina Beach, N.C.  
New Hanover County

Dear Mr. Lennert:

Recently the Division of Environmental Management has established interim guidelines concerning stormwater runoff into waters classified SA (shellfish waters). The following guidelines should be considered as minimum design requirements for purpose of controlling stormwater runoff.

1. Total impervious surface area must be 10% or less of the total site.
2. Discharges from stormwater retention ponds into waters classified SA, which result due to storm events which are less severe than the 100 year - 24 hour event, will not be approved.
3. The proposed development must effectively contain on site, at least the 100 year - 24 hour storm or the worst storm of record.
4. A 30 foot undisturbed natural buffer or equivalent modified grass buffer, must exist between any impervious surface area and the mean high water contour.
5. Dry wells or gravel catch basins designed to collect and retain stormwater are not considered to be an effective method of stormwater collection and/or retention.
6. In order to receive up to 50% "credit" on impervious surface area, 60% of the area beneath the proposed structure must be designated for the percolation beds. No vehicular parking on the percolation beds is allowed. Percolation beds must be installed beneath proposed elevated structures only. The beds

7225 Wrightsville Avenue, Wilmington, N.C. 28403-3696 • Telephone 919-256-4161

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should be designed with distribution laterns located 5 feet on centers. The beds should be a minimum of 18 inches deep and must be filled with gravel.

7. Impervious surface percentages should be considered to be as follows:

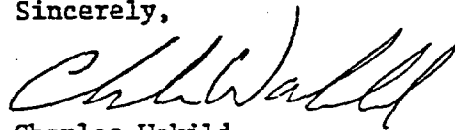
Paved - concrete, asphalt - 100% impervious  
Marl - 90% impervious  
Brick - 100% impervious  
Gravel - 70% impervious  
Wood - (with spacer) - 0%

8. Swimming pools are not considered to be impervious surface areas. Concrete, brick, and asphalt pool aprons are considered impervious surface areas.

After review of the subject project, it has been determined that the project does not comply with the above guidelines. It is expected that violation of water quality standards would occur as a result of the proposed project. The project should therefore be modified to conform with the above guidelines.

If you have any questions concerning this matter or require any additional information, please do not hesitate to contact Mr. Mike Williams or Mr. Preston Howard of my staff at (919) 256-4161.

Sincerely,



Charles Wakild  
Regional Supervisor

CW/MFW/sf

cc: Mike Williams  
Bill Mills  
Bob Stroud - OCM  
Wilmington Regional Office  
Central Files

ROBERT M. WILLIAMS AND ASSOCIATES

MAIL ADDRESS:  
P. O. BOX 5512, STA. #1  
WILMINGTON, N.C. 28403

CONSULTING ENGINEERS  
(919) 395-1007

OFFICES:  
3806 PARK AVENUE, SUITE #2  
WILMINGTON, N.C. 28403

October 26, 1985

Mr. C. Robert Stroud, Jr.  
Office of Coastal Management  
7225 Wrightsville Avenue  
Wilmington, NC 28403

Re: Levinson-Brown Property  
Canal Drive  
Carolina Beach, NC

Dear Mr. Stroud:

On behalf of and in accordance with instructions from Mr. Joe Levinson and Mr. Ray Brown, I am herewith making application for a modification to the CAMA permit issued to them several weeks ago. The reason for the modifications requested is to try to increase the utilization of their property more in line with their original plan and for which they have a building permit from the Town of Carolina Beach.

Enclosed is a copy of my recent drainage calculations which are based upon field percolation tests and evaluation of the actual soil conditions existing on the site of the project. The new calculations resulted in a design modification which reduces the size of the approved retention basin and changes its configuration. Also enclosed for your visual examination and evaluation is a relatively small representative sample of the soil from the site. The sample was taken as a composite from the two holes and represents a mixture of the soil from 0 to 2' depth.

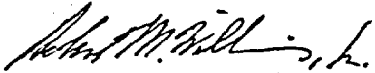
One factor which should be noted in this case is that the entire land area between Canal Drive and the estuary, including Canal Drive itself, is subject to frequent inundation during any given year from high lunar tides and/or tidal surges from severe wind action. During the "100 year storm" for which the guidelines require this design to be based, it is probable that the storm will be coincident with and the result of a hurricane such as "Hazel" which occurred in 1954. Such a storm would typically be expected to produce tidal surges which reach 10 to 12 feet above normal tides. Since the highest point in the area between Canal Drive and the estuary does not exceed 8' above mean sea level, virtually the entire area of Carolina Beach between Canal Drive and the estuary, as well as a great percentage of the rest of Carolina Beach and the other beaches in the area, would be extensively flooded, creating water quality problems of far greater magnitude than those which could possibly result from this project.

The owners have voluntarily reduced the size of their proposed project by taking 17.5' off of the south side of their structure even though they have a valid Town permit to construct the larger building. They are willing to construct the measures proposed in this modification even though no one else in the Town of Carolina Beach has been subjected to such stringent drainage requirements.

Based upon my professional opinion, experience and judgement, the design proposed herein is consistent with the intent and spirit of the CAMA program, and is adequate to protect the water quality of the adjacent estuary.

Again, on behalf of Mr. Levinson and Mr. Brown, I urgently request that you approve this modification request as expeditiously as possible so that they can proceed with construction promptly.

Very truly yours,



Robert M. Williams, Jr. P.E.

cc:

Mr. Joe Levinson

Mr. Ray Brown

Mr. Scott Shufford, Town Planner, Carolina Beach, NC



[illegible]

GAYLORD No. 2333

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